



Talking Avocados



The Australian Newsline

Vol 4 Number 4

November 1993

Sales Promotion
Consignment
Marketing
Quality
Sales Promotion
Marketing

Promotion And Marketing - A Very important Aspect Of
The Avocado Industry

I Heart Foundation "TICK"
I Cooling, Packing And Storing
I Quality - AVOMAN Says It All

The Original Avocado On Mt Tamborine

By Garry Ross

What does an avocado grower do to raise the income of his orchard? Well, here's what the Rosser family of Mt Tamborine has done. They turned it into a tourist park based on the historical nature of the property. It was here in 1946 that Messrs Sharpe and Wilson pioneered the Sharwil avocado, named after the two growers. The original tree still exists and around this they have built their tourist attraction "The Original Avocado".

In the marketing of any product, whether it be a tourist venture or a loaf of bread, the first thing to start with is a good product and this they set out to do. The marketing concept was to create a park based on the timbers and early construction methods of Mount Tamborine, for it was here that some of the great timber stands of Queensland such as cedar and hoop pine, grew. Where can we find such timber today?

The Rossers and their builders scoured this mountain looking for old buildings,

old logs. They sent the cut timber to the mill to be sawn, then using the construction techniques of the pioneers; they built a packing shed, restaurant, souvenir shop, coffee shop and stockyards. Recycled fine timbers were used for the restaurant furniture, in fact third generation recycled timber.

Today "The Original Avocado" stands as a monument not only to the early pioneers but as an example to those today who wish to apply a modern-day marketing approach to the avocado industry. The first essential of product marketing is to have a quality product to market, which The Original Avocado has. Naturally however, the Rossers did not stop there.

They have also learned much more about marketing avocados since the development opened.

They commenced marketing their fruit using the categories:

- fresh fruit,
- nutrition and

- other line extensions of the avocado.

Through sales in the fresh fruit shop they have found over 60% of customers buy ripe avocados for immediate use. If they're not available, they often won't make an avocado purchase. The Rossers are trying all types of promotional ideas such as their own avocados with avocado dressing to make avocado salad and different styles of avocado meals in the restaurant. Fresh avocados from the farm are a favourite on the menu.

In the nutritional field they are using specialists, such as Dr Colquhoun and Judy Walker, Nutritionist, to add credibility to the low cholesterol and nutritional properties of the avocado, not to mention the Guinness Book of Records which lists the avocado as the world's most nutritious fruit. This is supported by local publicity and is helping to create markets, for Gary Rosser believes markets don't exist, they have to be created.

One line extension they are looking at is avocado dip and avocado guacamole. They are already serving these in the restaurant and hope to retail market these products through their shop. They are also marketing their own range of avocado oils and cosmetics which, although new, are selling well. After all, the avocado is one of the world's great moisturisers and is the basis of most cosmetics. Other line extension products will be developed, for it is such products that help use the 40% of avocado production not suitable for domestic consumption. All products bear "The Original Avocado" brand.

The Rossers have learned a lot about tourism and avocado marketing since they opened but most importantly they have learned that growers must control their own marketing destiny if they are to obtain the increased profitability all growers deserve.



The Original Avocado showing the Store with the packing shed on the right hand side

New delegate To The Federation

At the beginning of October, Mrs Mary Ravanello of Mareeba became the new delegate representing North Queensland avocado growers on the AAGF and Queensland Avocado Subcommittee.

Mary is one of the generation of tobacco farmers who diversified into horticulture a few years ago. With her husband Natale and son Giovanni, they grow avocados,

mangoes, heavy produce and quite a few hectares of tobacco at Paddy's Green, a short distance west of Mareeba.

Mary replaces Don Lavers who has been delegate for the Tablelands since 1982.

Don has played a prominent role in Federation affairs over the past eleven years. He was President in 1986-87 and at other times has served on a number of sub-

committees that help to co-ordinate the activities of the Federation.

Don received the avocado industry Award of Merit at the Federation's National Conference in 1990.

On behalf of all avocado growers, I would like to thank Don for his tireless efforts in furthering the cause of the avocado industry. Ed

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Cover

Front Cover: Indicates the theme of this issue, promotion and marketing.

Back Cover: AVOMAN project - See the article "To Market, To Market; To Buy Avocados" on page 17. Photos by Scott

Calendar of Events

November

- 2 Avocado Growers Association of WA - meeting Conference Room, Market City commencing 5.30 p.m.
- 10 Richmond Branch of the NSW Avocado Association - meeting Alstonville Tropical Research Station commencing 5.00 p.m. Proposed changes to the Constitution will be discussed.
- 15 Brunswick Branch of the NSW Avocado Association - meeting Mullumbimby Ex Servicemen's Club commencing 4.00 p.m. Proposed changes to the Constitution will be discussed.
- 17 NSW Avocado Association - Committee meeting Ballina RSL, Ballina, commencing 9.00 a.m.
- 18 Coffs Harbour Branch of the NSW Avocado Association - meeting Coffs Harbour Catholic Club commencing 7.30 p.m. Proposed changes to the Constitution will be discussed.

December

- 6 Avocado Growers Association of WA - meeting Conference Room, Market City commencing 5.30 p.m.
- 6-8 Australian Avocado Growers' Federation - Directors meeting, Queensland Fruit & Vegetable Growers.

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Typesetting

MacBureau, Currumbin

Printing

All Print, South Tweed Heads

ISSN 1039-2394

This publication is distributed free to all Australian avocado growers and is available to non-growers for an annual subscription of:

Australia - \$14; NZ - \$20; and other overseas countries \$24, Australian currency only.

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Talking Avocados is the official magazine of the Australian Avocado Growers' Federation and in conjunction with the Australian Horticultural Corporation is published four times a year (February, May, August and November).

This publication is distributed upon the understanding that the publisher is not engaged in legal, cultural or other professional advice. Opinions expressed by contributors are not necessarily those of the publisher, the Australian Horticultural Corporation or the Australian Avocado growers' Federation.

From Your Federation

By Bryson Dyke, Executive Officer, AAGF Inc

This is probably the last time you will hear from me in this capacity, as I have accepted a new job outside horticulture. Therefore I would like to make a couple of quick comments before leaving the desk.

Your Federation has a very, very important decision to make at its December meeting. This decision relates to whether or not the avocado industry should remain a levy paying industry to the Australian Horticultural Corporation (AHC). I appeal therefore, to all growers of avocados to think long and hard about this issue.

Directors of the Federation are presently attempting to gauge what the growers think about the industry being involved in the AHC. Has it been of benefit to you? Do you think you are getting value for money? Is it more or less than you anticipated when you first moved to join the AHC?

There are strong arguments for staying in the AHC and also strong arguments for leaving. The Directors of the Federation would like to hear from anybody who has an opinion on the subject.

In thinking about these issues it is necessary to think long term. For example, the levy rate of 15¢ per box or 1% of gross

proceeds may appear a significant amount. This should be compared with levies on other products as well as countries. For example, Californian growers can pay up to 5% gross proceeds of sale for their promotion levy.

There is also a need to consider what needs to be done to cause avocados to become a staple part of the Australian diet rather than the position of a "discretionary purchase" that they now hold. All the promotion which has been carried out previously has aimed avocados at the upper socio-economic group. We have not even attempted to seriously promote avocados to the majority of Australians.

We are also facing a political climate in Australia whereby the funds for helping producers are drying up rapidly. We have seen this in the reduction in personnel working on avocados in Queensland. The emphasis for the next few years at least will be on marketing and export.

Reading between the lines this means that if the industry needs help in any way, it is going to have to pay for that help which was previously funded from taxes.

The most important attribute that the AHC offers is the Act which allows the collection of levies from all avocado

growers on a national basis. It is obvious that your Federation and many growers would prefer that funds collected from levies were lodged with the AAGF rather than the bureaucracy. Unfortunately this is not the case at the moment.

It must also be borne in mind that there are ways of achieving most of the industry's objectives outside the AHC. Therefore, there is a lot of thinking to be done between now and the second week in December. So please give it your best shot.

In conclusion, I would like to say that I have enjoyed working with the avocado industry. It is different than most other horticultural industries and certainly one which is innovative and has great potential.

If you believe the Horticultural Policy Council's paper entitled "The Way Forward", the future of a strong Australian avocado industry lies in its ability to provide a strong national association. My hope is that the AAGF continues to provide that service to the industry.



HAVE YOUR SAY

"Hey" avocado growers. Have we had the baby before the wedding? No, I'm not casting aspersions against your family tree (talking about trees, I often wonder how wise we are for growing avocado trees!).

What I'm on about is the spending of large amounts of money on promotion of the world's finest fruit before we have the quality problem sorted out.

Constant feedback from the retailers and consumers suggests a poor perception of the quality of our product. Now I know it couldn't be your fruit and it certainly isn't mine, so who are the lousy "so-and-sos" who are doing untold damage to the industry?

After a recent trip to the market I've come to the conclusion that a large proportion of this inferior fruit comes from the smaller grower (I'm only a small grower). Several consignments of poor quality fruit came from my area from growers that I've never heard of. "Bill Smith" may be a first class banana, citrus

or small crop grower but he is a terrible avocado grower.

As market inspectors are as rare as rich avocado growers, I feel that the answer must come from the industry.

A limited number of central packing houses could be the answer. If a large proportion (say 90%) of fruit was packed to a constant quality, there would be no need for further inspection. This would allow the inspectors to concentrate on avocados coming from individual farm packing sheds.

I urge all growers to consider forming or joining a packing and marketing group. In California, with their huge production of avocados, you could name the packing houses on one hand.

We have a consumer base who enjoy quality avocados and we can avoid disappointing these people by sorting out the quality problem. That would be the time to increase our spending on promotion to increase our consumer base.

Don't forget, we are competing against other fruits and avocado imports could be just around the corner.

G. Gordon
Upper Burringbar NSW

CAN I ENCOURAGE YOU TO HAVE YOUR SAY?

From the Editor

I am sure that you have something to say about your industry. How about writing in and air your views.

This issue of Talking Avocados is designed to cover promotion and marketing, yet despite a request to hold a forum, only one person contributed to the subject. Hardly a forum!

From what is written in the HRDC article on page 19, insufficient funds are available to carry out all research projects submitted for consideration. Even AVOMAN is suffering from insufficient funds.

This being the case—what do you think about increasing the current HRDC levy from 3¢ per tray to 5¢ or more to cover additional research?

Please let your association representative know your opinion on this subject and also write in to Talking Avocados and let other growers know as well.

Avocados Get The Tick

By Bryson Dyke, Executive Officer AAGF



All promotional materials for avocados can now carry the Heart Foundation Tick of Approval.

This is in recognition of the fact that avocados are a healthy food and are good for your heart.

The health conscious consumers in our society are looking for direction on most appropriate foods to maintain good health. The Heart Foundation Tick has been a leader in this field for some years and has proved very successful in allaying the public's fears.

There is still evidence to suggest that a proportion of the medical and health fraternities are suspicious of the advantages

of avocados in the diet. There is, however, a wealth of evidence to demonstrate that avocados in the diet will help to lower cholesterol (avocados have no cholesterol in themselves) and can also be used to reduce weight.

In discussing the use of the tick, the Australian Avocado Growers' Federation feels that at this point in time it should not be used on individual growers' cartons of fruit. This could well change in time as more and more growers become quality conscious and begin marketing quality assured lines of fruit.

In order to expedite the use of the tick, it is requested that all material be sent via the Executive Officer of the AAGF for



approval in the first instance. The "Tick" is copyright and the right to use the logo belongs to the Federation and should not be used without their concurrence.

The logo for the Heart Foundation Tick should be copied exactly from the copyright symbol onto promotional material.

The head license for the Heart Foundation Tick is held by Australian United Fresh (AUF).

Shoppers Use "Tick" As Aid To Choosing Healthy Food

By Suzanne Conley, Communications Officer, Australian Horticultural Corporation



Shoppers are increasingly using the Pick the Tick logo to help them in their food choice at point of sale, according to a recent survey by the Roy Morgan Research Centre.

The survey, conducted in May this year, found that most of the 1,254 male and female respondents believed the Tick helped them make healthy food choices.

When asked, "When shopping, what effect do you think seeing the Tick logo would have on your choice of foods?", 69 per cent answered the Tick made it easier or much easier (see Table 1.)

The use of the National Heart Foundation Tick has increased by 135 per cent among men and 36 per cent among women in the past two years. Women aged between 25 and 44 years used the

Tick most often.

Recognition rates of the Tick have risen significantly in the past two years. In 1991, 84 per cent of women and 76 per cent of men were familiar with the logo. This year's figures were 93 per cent and 87 per cent respectively.

The recognition rate among women in all age groups was particularly high at almost 100 per cent.

The household category showing the highest recognition rate at 99 per cent was the young/married couple without children.

When asked, "what do you think the Tick means?", each person could give up to three answers. The healthy or good for you/nutritious category recorded the highest response of all 5 categories for men and women (see Table 2).

The category was most popular among men and women aged between 16 and 24 years (53 per cent).

Less than 1 per cent of men and women believed the Tick cured heart disease. "Can eat as much as you like" recorded consistently low responses.



Table 1. When shopping, what effect do you think seeing the Tick logo would have on your choice of foods? (Total sample)

	1991	1993
Would make it harder/much harder to choose healthy foods	-	3%
No particular effect	-	25%
Would make it easier/much easier to choose healthy foods	-	69%

Table 2. What do you think the Tick means? What else? Anything Else? (Total sample)

	1991	1993
Healthy or good for you/nutritious	31%	47%
Low in fat/salt/cholesterol or high in fibre	37%	40%
Healthy or good for your heart	27%	36%
Does not contribute to heart disease	10%	15%
Cures heart disease	0.4%	0.3%
Can eat as much as you like	1.1%	0.7%

Avocado Promotion For Infants A Feature Of The 1994 Campaign

From Queensland Fruit and Vegetable News, 12 August 1993

An information leaflet promoting the benefits of avocados for infants will be a feature of the Australian avocado industry's 1994 promotion campaign.

Queensland Fruit & Vegetable Growers (QFVG) promotions co-ordinator, Ann Duggan, said the infant leaflet was part of an Australia-wide campaign which included national magazine advertising in the peak supply periods, point-of-sale promotion material and in-store demonstrations in Brisbane, Sydney and Melbourne.

QFVG has been contracted by the Australian Horticultural Corporation to develop and undertake the campaign on behalf of the avocado industry.

Ms Duggan said the infant leaflet would make mothers aware that avocados are an ideal first solid food for their babies.

"It will emphasise that they are easy to prepare and highly nutritious," she said.

"It will suggest that they can be combined with other foods like banana,

apples, potatoes and pumpkins and at a later stage smeared on toast instead of butter.

"The infant campaign is part of a long-term plan to increase avocado consumption by making the fruit part of the daily diet of a new generation of Australians.

Ms Duggan said advertising in major national magazines would once again be the mainstay of the promotion.

"The magazine advertising started in July and will continue in concentration throughout August and September," she said.

"This was identified as the peak supply period for a number of avocado varieties by the Australian Avocado Growers' Federation.

"Publications we will use include the 'Australian Women's Weekly', 'New Woman', 'Better House and Garden' and 'The Australian' magazine.

"The avocado industry felt national magazine advertising was the most effective means of reaching a national market with the budget available.

"The 'Australian Women's Weekly' alone is read by 2.4 million people every issue."

Ms Duggan point-of-sale material, which included a double-sided hanging poster, would concentrate on consumer education.

"One side of the poster demonstrates how to tell when avocados are ripe, the other emphasises that avocados are available all year round. This side will also feature photographs of several varieties of avocado, to increase consumers' awareness that there are different varieties with their own distinctive characteristics."

Other point-of-sale leaflets would provide consumers with storage, nutrition and general information and recipe ideas, Ms Duggan said.

How About Visiting New Zealand?

The NZ Avocado Growers Association has invited Australian growers to attend their Annual General Meeting and to meet their Kiwi counterparts.

The meeting is more like a 2 day conference with a seminar, dinner, orchard walk and workshop. It is to be held at the Willow Park Hotel, Tauranga (2 1/2 hours drive from Auckland) on 11-12 November.

Unfortunately, there is not much time to make arrangements, therefore, those wishing to attend should contact the NZ AGA Secretary, June Bronger, by phoning 0011 64 7 578 4914.

AAGF Asks AHC To Exempt Processing Avocados From Levy

The AAGF has written to the AHC requesting that avocados forwarded for processing be exempted from the promotional levy.

This move is designed to encourage

growers to remove poor quality fruit from the marketplace yet still receive some return for their efforts.

Processing avocados would still be liable for the HRDC research levy.

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World News



Mission Produce Hydrocools Avocados To Extend Shelf Life

From California Grower, July 1993

Mission Produce, Inc. has begun hydro-cooling its fruit immediately upon its arrival from groves throughout Southern California.

According to Steve Barnard, Mission's president, adding the extra step of hydro-cooling avocados is designed to extend the fruit's shelf life in retail stores.

"Our retail customers want consistent fruit, whether they order it unripe or pre-ripened by Mission. Getting the field heat quickly out of our avocados is the first step in creating that consistency in our pack," Barnard said. "Testing has shown the hydrocooling can extend the shelf life of our fruit by

a very considerable time, whether it is pre-conditioned or not."

During the peak volume season, when temperatures can rise into the high 90's and 100's in the inland valleys and canyons where the fruit is grown, it can take over 24 hours following picking to reduce field heat.

The normal manner of cooling used by other handlers uses forced air. That process also has the effect of dehydrating the fruit, while hydrocooling actually hydrates it.

At Mission's Oxnard packinghouse, each arriving field bin of fruit is immediately hydrocooled. The avocados are

bathed in water at a temperature of 36°F at a rate of 10,000 gallons per minute. Pulp temperatures are reduced from 100°F to 40°F in one hour.

"Our goal is to have all field heat out of our fruit in 12 hours from the time it is picked, no matter where in Southern California it comes from," Barnard said. "We have always been noted as the innovator in the California avocado deal and this is no exception.

We are taking this extra step to give our retail customers longer shelf life in the avocados they buy from us. No one else is doing that."

Storage Temperature Of Tropical Fruits Critical, Conference Told

From Queensland Fruit and Vegetable News, 12 August 1993

Storing tropical fruits at the optimum temperature is critical to prevent many post-harvest problems, the International Conference on Post-Harvest Handling of Tropical Fruit was told recently.

Queensland Fruit & Vegetable Growers economist Margie Milgate attended the conference held from July 19 to 23 in Chaing Mai, Thailand. Ms Milgate attended the event on behalf of the organization during her annual leave.

"The big message that came out of the conference was that the maintenance of product at its optimum temperature was a critical issue for tropical fruit producers," she said.

"A number of speakers said that storing product at the correct temperature would inhibit many common post-harvest diseases and problems we now have.

"Growers can do everything right in the field and in the packing shed, but if they do not get the storage conditions right they will not be able to present a good product to the consumer.

"It appears that more work will need to be done to determine the optimum storage conditions for many tropical fruits."

Ms Milgate said greater export co-operation between Australia and south-east Asian nations was urged at the conference.

"It was suggested that Australian tropical fruit growers could link with producers in Malaysia, Thailand and Indonesia in supplying products year round to cooler climate nations", she said.

"It was noted that Australia's main marketing advantage was being 'cross-seasonal' to other tropical fruits producers to our north.

"The conference was told that emerging South American tropical fruit producers posed the biggest threat to the traditional Asian suppliers.

"Statistics presented at the conference revealed that exports of tropical fruits to wealthy Asian nations like Japan and Korea were coming more and more from South American countries, which were

benefiting from North American investment and transfer of technology.

Salt-Tolerant Avocado Root Stock

In these times of changing climate and water shortages, although those along the River Murray may disagree, salinity is causing problems to many crops in many areas.

The Israelis have conducted research into salt-tolerant avocado root stocks. They have had some success and have developed a high-yielding rootstock that is salt-tolerant.

Therefore, for growers in areas where applied irrigation water is high in chlorine or rising ground water is a problem, perhaps you should ask your local Extension Officer to investigate this matter further.

The intention is to publish an article on this subject in the next edition of Talking Avocados.

Australian Round-up



West Morton Region

In early October, the West Morton area was still severely drought stricken. The rain that coastal growers have enjoyed in the past months has not penetrated beyond the coastal ranges. Water supply is now a serious problem for many growers and if there is no significant rain in the next month, then fruit set will be seriously affected.

Most growers are reporting an average flowering although it is significantly later than normal—the result of a warm winter!

Harvesting has largely been completed in the Gatton area, however, the growers on the range will continue picking for another 2-3 months. Some started earlier than normal due to the dry weather and to take advantage of good market place prices.

A Field Day was held in early September at Rob and Keith Brain's orchard to review the canopy management work that was looked at in March. Alex Banks also discussed the Growth Cycle Recording sheets for the AVOMAN project. These created considerable interest and were seen as a positive move towards better management. The results of the market surveys in Sydney and Brisbane prompted considerable debate and concern.

Atherton Tablelands

Tableland Field Day

A September field day at the Ewan Bruce avocado orchard near Yungaburra was part of the continuing policy of enhanced technical exchange and communication that has been prominent in Atherton Avocado Association activities.

Under the supervision of DPI Extension Officer Irene Kernot, growers cut up fruit from three consignments of Hass—two from local suppliers and one from the south—purchased from Tableland retailers. They recorded internal quality on the survey sheets designed for AVOMAN.

The two local lines scored well but the line introduced from the south showed a significantly high level of unacceptable blemish. It was interesting to note that one of our members had purchased fruit from the line of southern avocados four days previously and found they were highly acceptable and ate well. There had apparently been a marked deterioration during the short period they had been held at the retail outlet.

Crop Cycle

Irene Kernot gave a talk on the physiology of the avocado flower and highlighted the main features from panicle emergence to fruit set that should be observed in order to give the recording of this part of crop cycle maximum significance.

The manager of Bruce Orchard, Mike Hodgson, explained that he had been monitoring the flowers on the young Shepard trees daily and until early September, had seen almost exclusively male flowers. Some growers had observed an unusually vigorous spring flush in their orchards. Members believed that the establishment of an accurate Shepard crop cycle should receive high priority and several agreed to augment Irene's research by recording data from their trees on AVOMAN record sheets.



Perth Royal Show 1993

The Royal Show, held on 2-9 October was a great success. Sales of fruit covered costs and some 50,000 samples of dip and smoothies were served to potential consumers.

October 14 is the launch date for a \$15,000 in-store promotional campaign to cover 150 demonstrations at retail level. Funded 50% by the AHC levies and the balance from market agents, Sunshine Coast and WA Health department. The "Avocado month" runs in conjunction with heavy media/press exposure—funded by \$4,000

of local AGAWA funds.

Flowering is well under way for next season. However, the 1993 crop is down a little on our heavy crop of '92. A higher percentage of seconds has resulted from severe storms last November just after fruit set. These storms caused considerable wind rub problems.



The latest figures from the Australian Bureau of Statistics (ABS), made available by NSW Agriculture, reveal that avocados are grown commercially in five of the Australian States.

Queensland leads the field producing over half the countries output.

In NSW, avocado production is mainly centred on the north coast between Grafton and the Queensland border. However, in the Sydney area avocados are grown at Penrith, Kuringai, Gosford and Port Stephens.

Most growers may be aware of avocado orchards in the Coffs Harbour and Nambucca regions but few would know Ulmarra, Kempsey and the Hastings area around Taree are also production zones.

To the west of the State, avocados are grown at Narromine, Griffith, Leeton, Wakool and Wentworth.

A summary of the ABS figures for each State and those for the various areas of NSW are given below. These figures are only as good as the information supplied by growers in the avocado industry.

	Queensland	NSW	Victoria	SA	WA
Trees under 6 years	90771	20330	4047	5266	13776
Trees 6 years and over	177541	67302	29664	16366	25060
Total trees	268312	87632	33711	21632	38836
Production Tonnes	6974	2871	845	391	460

ABS figures for the five avocado growing States

	Grafton to Tweed Heads	Hastings to Grafton	Sydney area	Western NSW
Trees under 6 years	12211	5377	895	1847
Trees 6 years and over	45572	15642	400	5688
Total trees	57783	21019	1295	7535
Production Tonnes	1989	697	6	179

ABS figures for the four major growing areas of NSW

Tilting The Playing Field Our Way

By Warren Meredith, President NSW Avocado Association

Since mid-June of this year a quiet but dramatic revolution has occurred. For many years now, many industries have complained that they have to follow Australian laws, with increased costs associated with the things they produce, but have observed lower priced imports which appeared to be under few, or, no controls.

The food industry, in general, has been especially concerned, assailed in Australia about the use of chemicals and correctness of labelling, and yet had to observe food imports which they were sure (but could not reliably prove) had the use of forbidden chemicals, inappropriate labels and unknown, possibly unhygienic, processing practices.

The Australian Quarantine and Inspection Service (AQIS) is now conducting two types of inspection on imported food-stuffs. The first is the traditional quarantine inspection to protect crops and animals. The second is a recently introduced inspection to protect human health.

Before 1990, food import inspections were as listed in the table below.

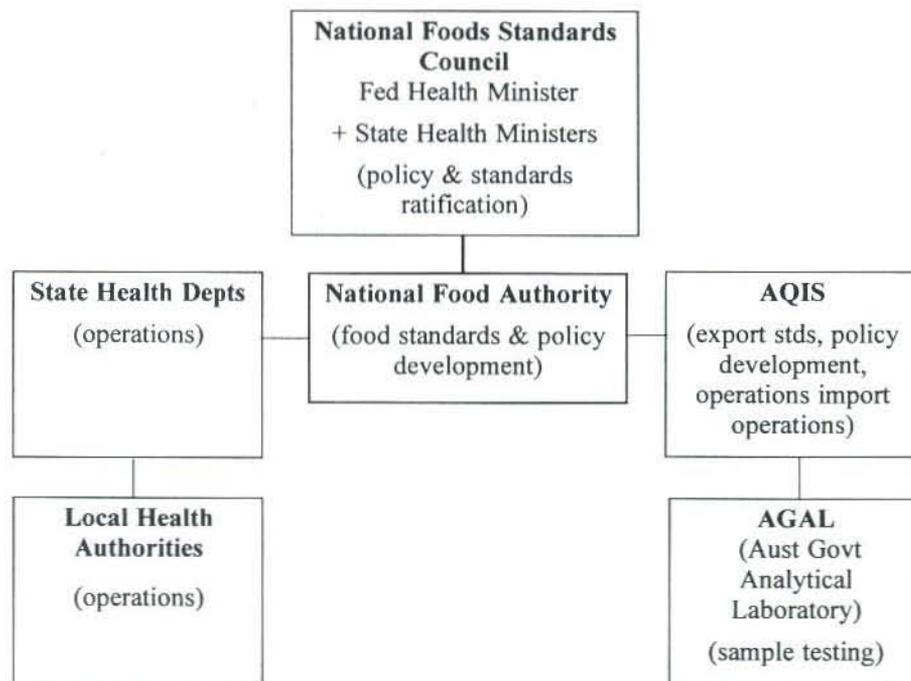
Program	Agencies
Radiation screening of foods from the area affected by the Chernobyl accident	Aust Customs Service (ACS); Aust Govt Analytical Labs (AGAL)
Mercury contamination of fish	ACS; AGAL
Microbiology of cooked peeled prawns	AQIS; State Health Departments
Listeria contamination of cheese	AQIS

The recently introduced Imported Food Inspection Program (IFIP) is jointly run by AQIS and the National Food Authority (NFA), with the Authority developing food risk assessment policy and AQIS having operational responsibility.

The legal basis for the inspection of imported food is the Imported Food Control Act 1992. Inspection is carried out by AQIS officers.

Standards are applied according to the Australian Food Standards Code, as developed by the NFA under the National Food Authority Act 1991.

There are three tiers of government involved in food inspection; Commonwealth (import/export), State (food in the marketplace) and Local (food in the marketplace).



The above chart shows this relationship

AQIS activities are summarised as:

Quarantine Division

- Animal (export & import).
- Fruit & Vegetable (export & import).

Note. The focus is on preventing transmission of diseases/contaminants to Australia's agricultural industries (i.e. transmission to animals/plants), and prohibited importation of certain products.

Food Inspection Division

- Export (meat, processed foods) Import (all foods).
- Food Standards/Safety.

Note. The focus is on prevention of transmission of micro-organisms/contaminants of public health significance (i.e. transmission to people), and no import restrictions other than quarantine requirements.

The IFIP operates with three inspection categorises. They are:

- Foods which have been categorised as "risk" foods by the NFA. All consignments of "risk" foods are referred to AQIS. The intensity of inspection depends on the compliance history of overseas suppliers.
- For a set period, usually six months, certain foods are classified as "active surveillance" foods. These foods are selected at a rate of ten percent per country of origin.

- "Random surveillance" selects five percent of all other food shipments for inspection.

The inspection categorises are summarised as:

Risk categorised

- Risk assessment by the NFA.
- 100% of shipments referred to AQIS.
- Compliance history of supplier determines inspection status.
- Goods held pending clearance.

Active surveillance

- Classified for set period - 6 months usual.
- Selected at rate of 10% by country.
- Immediate release unless under a 'holding order'.

Random surveillance

- 5% of all food shipments not otherwise selected.
- Immediate release unless under a 'holding order'.

Holding orders are issued when previously sampled and released food is found not to comply with the FSC. The next shipments (usually 5) from that supplier are held pending inspection and analysis. The holding order is removed when goods are found to meet the requirements of the FSC. Holding orders can also be issued when an inspector comes across suspect food during a routine inspection.

QUARANTINE

9 Switching rules are applied to "risk" foods to allow produce which is consistently up to scratch to proceed to a less rigorous inspection program. Any product which fails goes right back to start again under intensive inspection.

The switching rules are:

- Tightened - Intensive Inspection (5 Clear Results)
- Normal - 1 in 4 Consignments (20 Clear Results)
- Reduced - 1 in 20 Consignments

Foods categorised as "risk" foods and the tests which are carried out on them are shown in the adjacent table.

The foods currently categorised as "active surveillance" foods are as follows:

Vegetables - sampled for pesticide residues, appearance (including labelling) and extraneous matter.

Spices and herbs - mainly visual inspection and microbiology for spices often used without cooking.

Cereal products - pesticide residues and visual (biscuits, cakes, pasta).

Prepared meat & fish (canned pate, fish paste, caviar, herrings) - microbiological aspects and some physical testing.

Inspections are at the cost of the importer. The 1992/93 inspection charge is \$88 per half hour, with a consignment clearance fee of \$30. If a consignment is made up of multiple food lines, the clearance fee is payable for each line. Analysis costs can be considerable, for example,

the microbiological testing of cooked and peeled prawns is approximately \$600 per batch (if a consignment contains several batches, each may be tested at a cost of \$600).

AQIS can enter into certification arrangements with foreign governments or quality assurance (QA) arrangements with overseas manufacturing establishments. Overseas QA arrangements must be based on the ISO 9000 series of quality management standards.

Food	Contaminant(s)
Acid vegetables in soldered cans	Lead
Cheese (selected)	<i>Listeria</i>
Coconut	<i>Salmonella</i>
Crustaceans & molluscs	Various micro-organisms, Cadmium (crustaceans), PSP (scallops)
Figs	Aflatoxin
Fish (selected)	Mercury, <i>Listeria</i> (vacuum packed fish)
Mushrooms (canned)	Various micro-organisms, physical testing
Paprika & pepper	<i>Salmonella</i>
Pasta products (containing egg)	<i>Salmonella</i>
Peanuts	Aflatoxin, Cadmium, Mercury, OC residues
Pistachio nuts	Aflatoxin
Seaweed & kelp	Arsenic, Cadmium
Selected food	Radiation
Strawberries	Captan

If you know of chemicals being used overseas which are banned in Australia then pass on this information. For avocados, it is suggested you advise your local avocado organisation which can then refer the matter to the AAGF. For instance at the presentation to NSW Farmers Fruit Committee the AQIS representative briefing the Committee on the IFIP was advised of possible antibiotic use in imported fruit.

The Fruit Committee was advised that the much expanded inspection program for imported food came about through public pressure. I feel it should be recorded here that NSW Fruit and Vegetable Committees have been strenuously campaigning for at least the last four years for this action to occur.

The IFIP means that we are on the way to having our own high standards for produce applied to imports, and we have the chance of advising the NFA of contaminants which we believe could be in imported produce.

The price of a level playing field is eternal vigilance!

Thanks to Jennifer Barnes, Imported Foods Section, AQIS, Canberra, for her help in the preparation of this article.

MARKETING

Retailers Call For Labelling Fruit

From NSW Farmers News, August 1993

More retailers are exerting pressure on suppliers to provide them with fruit that is labelled.

Retailers are recognising the value of merchandising produce by variety, at differing prices. This is only possible for loose fruit if the product is individually labelled, particularly where a store relies on multiple check-out facilities and staff with limited product knowledge.

Labelling by variety has proved to be so successful that certain customers are now demanding it.

Varietal identification at store level translates into benefits for the producer, as it enables prices to be set and appropriate premiums to be achieved for high value fruit.

Labelling also serves to educate the consumer. There is no more effective way of

conveying a message than on the fruit itself.

In Japan, packers have been supplying labels in sheet form in fruit cartons, to be applied by retailers before display. As packers begin to install modern labelling equipment, labelling programs are being extended to increase the amount of fruit individually labelled. This also ensures that labels are actually used on the fruit and not left in the box.

In the United States, the use of individual fruit labels has been extended to include "product look up" (PLU) numbers. Sinclair International has provided labels that feature a unique number that signifies the fruit type and variety which is entered at check-out and forms the basis for invoices and stock control.

An increasing number of retailers are beginning to source produce that is also labelled with their own "house brand". This is all part of a new retailing philosophy which allows retail outlets to use their own name as a brand name for articles and offer a wide range of products.

This does not mean the product under their own name is sold at lower prices. On the contrary, private labels have to make sure that they offer the same high quality as established fruit brands, which costs money. As a result, these private labels can compete with established brands, and not be seen as cheap alternatives.

With retailer power growing, the ability to tailor product specifications to meet particular customers' requirements is becoming mandatory.

Avocado Imports - Real or Imaginary

By Orf Bartrop

Leaving aside the current situation where New Zealand avocados are imported into Australia, are we in danger of imports from other countries?

With the lifting of trade barriers with South Africa and the Federal Government's policy of lifting of international trade barriers, the way could well be open to competition from overseas avocados.

Chiquita, a name that is known by most growers, is entering the avocado market, but before discussing that, let us review what the BGF Bulletin, August 1993, had to say on the Four Corners television program on this subject.

Four Corners Lifts The Lid On Chiquita And Imports

The ABC's Four Corners program of 21 June was a revelation for most Australians and many banana growers.

The program showed how the international banana conglomerate Chiquita, which used to be known as United Fruit, has built up its vast empire. The show included footage linking the company to the overthrow of a former Guatemalan government. It also outlined the company's powerful position in relation to the politics of the central Americas.

Reporter Frank Maguire pointed out that the term 'banana republic' was coined to illustrate the relationship between the central American republics and the company. At one point he referred to 'the Octopus', the name by which the company has been known throughout the region.

The program examined a number of points including:

- how, in only three years, the company has acquired around 20% of the Australian banana industry;
- the possibility that the company may have intentions concerning further expansion of its Australian operations;
- the possibility that Chiquita's long term aim may be to secure the right to import bananas into Australia;
- the fact that quarantine restrictions which are in place to prevent the entry of exotic diseases into Australia have been inaccurately represented as trade barriers;
- the detrimental effect that the entry of Chiquita has already had on the Australian banana industry in terms

of creating divided loyalties and uncertainty among growers;

- the effects that the importation of bananas would have on the livelihood of small banana growers and on rural centres which for generations have depended largely upon the banana industry for their existence and survival;
- the fact that Australian bananas are produced by growers in accordance with a range of provisions governing employee wages and conditions, in contrast to the situation in central America and elsewhere;
- the apparent lack of knowledge, interest, motivation or authority to act on the part of the Foreign Investment Review Board, and
- the comment by the chairman of the Federal Government's Task Force on the Future of Australian Horticulture, Senator Nick Sherry, that the importation of bananas would eventually be inevitable.

Following the screening of the Four Corners Program, Senator Nick Sherry, Chairman of the Task Force on the Future of Australian Horticulture, commented in part:

"There appears to be a real need for the banana industry to improve its competitiveness to enable it to compete more effectively should imports become a reality in the future. The industry has to respond to challenges such as the type presented by Chiquita by adopting improved marketing practices, such as quality assurance programs and an export market development strategy."

John Anderson, Shadow Minister for Primary Industries and Energy, also responded to the program. One of his comments was:

"Quarantine is the only acceptable reason for keeping out non-subsidised and non-dumped product, and even then, when our fruit is stopped from going into another country because of fruit fly etc., we want to be sure that it is for a genuine reason, and that the country concerned is not just using quarantine as a trade barrier."

It is with this background that avocado growers should be made aware of Chiquita's entry into avocado marketing.

The following article was published in the California Grower, June 1993, and indicates that the Australian avocado industry may be targeted in the foreseeable future.

Chiquita, Lopez & Thomas Announce Exclusive Agreement

Chiquita Frupac Inc., a subsidiary of Chiquita Brands International and Lopez & Thomas Foods, Inc. have signed an exclusive marketing and production agreement, signifying their production entry into the California avocado industry.

Under the terms of the agreement, Lopez & Thomas Foods will be licensed to source/produce Chiquita branded avocados. This initial set-up of production resources in California represents an important first step in the planned expansion of the two companies. Target markets include the United States, Canada, Mexico, Europe and the Far East.

Though both organisations will distribute Chiquita and L&T brand avocados, Chiquita Frupac will concentrate on marketing the fruit while Lopez & Thomas Foods will focus on sourcing and production. Prior to this agreement, both companies were individually involved in distributing California avocados in the U.S. and overseas.

Chiquita Brands International is the largest producer, marketer and distributor of bananas in the world. The Chiquita brand is one of the most highly recognised and respected brands in the produce industry.

Through Chiquita Frupac Inc., a Philadelphia PA based wholly owned subsidiary of Chiquita Brands International, the Chiquita brand and quality have become available on avocados, mangoes, grapes, Asian pears and kiwifruit. The company has marketed these fruits throughout major retail, wholesale and foodservice accounts in North America.

Based in Laguna Hills, Lopez & Thomas Foods, Inc., is a premier distributor into the western U.S. of fresh produce from North, Central and South America. It is a consortium of international growers, distributors and marketers led by co-founders Dan Lopez and Dana Thomas who have long been active in world-wide marketing and production of avocados.

So, Avocado growers be warned.

The Importance Of Buying Anvas Registered Trees

By Roslyn Stark, ANVAS Registrar

Background

In 1978, the Avocado Nursery Voluntary Accreditation Scheme (ANVAS) was established to supply the avocado industry with pathogen tested, true to type planting material.

The Virus Tested Tree Register (VTTR) was begun in 1980 to improve the quality of propagation material available to the industry, namely material with trueness to varietal type and freedom from the debilitating disease avocado sunblotch viroid. By 1987 these two schemes had been combined and retained the name ANVAS.

Australian Bureau of Statistics figures for 1991 showed the total number of avocado trees in Australia to be 445,000, of which 309,000 were currently in production. Over 100,000 labels for indexed trees have been sold which would indicate that almost one quarter of trees planted have been raised from accredited stock.

Benefits of the Scheme

Buying trees from an ANVAS nursery does not guarantee that field infection with phytophthora will not take place, however the benefits of this Scheme are obvious. In the nursery, plants are raised under conditions which minimise the incidence of pythium and phytophthora root rot. Symptoms of these diseases are also not masked by the application of fungicides. The planting material, to a large extent, is taken from trees which have been virus tested, and the method of propagation ensures both rootstock and scion are true-to-type to give the desired characteristics for disease resistance, fruit quality, etc.

For some time, growers have recognised the cultural benefits of using accredited material but in many cases have not had their plantings inspected to obtain registration. However, for those who have obtained registration, they now have the opportunity to export to New Zealand (NZ).

In September 1992, officers of the NZ Ministry of Agriculture and Fisheries (MAF) visited the Registrar, a major nurseryman and registered block holders to gain an understanding of ANVAS.

Because of NZ's sunblotch free status, the avocado appendix to the Bilateral Quarantine Agreement between NZ and Australia allows

only fruit from ANVAS registered blocks to be exported to NZ. Large new plantings are taking place for the April-July niche in the NZ market.

ANVAS Nurseries

The nurseries which currently have ANVAS membership in 1993 are: Anderson's Avocado Nursery, Duranbah; Batson's Nursery, Woombye; Birdwood Nursery, Woombye; Mountain Views Nursery, Pomona; and Rainforest Nursery, Mareeba.

Are My Trees Still Registered?

If you are the holder of a current Certificate of Registration and have maintained your block in keeping with the following criteria, then your trees are still registered.

- Cutting tools restricted to use on registered trees or cleaned with sodium hypochlorite.
- Advice to Registrar of topworking, additions or replacements.
- Maintenance of a 15 metre distance between registered and non-registered trees.
- General block maintenance.

Providing these procedures have been followed, older orchards can be used for export fruit.

NB: Trees propagated from material taken from registered trees do not have registered status. They cannot be used for fruit for export to NZ. Such trees should not be planted in a registered block or within 15 metres of registered trees.

If you have any queries in regard to the continued registration of your block, please contact The ANVAS Registrar on (07) 213 2482.

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Are You A Member?

Many growers are still not members of an avocado association. It might not seem important to be a member, but be assured, it is. It is only by being able to say that an avocado association represents the majority of growers that the industry has been able to influence government thinking.

Besides, wouldn't you like have a say in how your industry levies are spent. It is no good complaining later on if you do not like promotional or research programs. By becoming a member and attending meetings, you can have your say now.

Developments In Packaging And Palletisation

By Collin R Sharp, General Sales Manager, Specialty Products, Amcor Fibre Packaging

Developments and Overseas Trends

Developments in all packaging materials over the next decade will continue to be heavily influenced by environmental considerations. Many different restrictions, covenants and legislative measures are being adopted or proposed in various parts of the world to reduce the growing amounts of domestic refuse, of which **non-recyclable** packaging forms a significant part.

In Germany for example, the TOPFER Law states that if you can do without packaging, do without it, if it is unnecessary packaging it is illegal. This may, for example, be a lid on a produce tray. If the tray can be stackable, plus protect the fruit from damage, then the lid is unnecessary and may well become illegal.

Developments by packaging companies in structural designs and in paper making have taken on a more significant role in the past few years and will continue to grow in importance. R & D as a percentage to sales is growing each year. Technical developments in Board making include better fibre alignment in each specific layer, producing directionally strong layers similar to plywood.

In Australia we will follow with technological developments determined by regulation and legislation—size and shape will be determined by the end user of the packaging, not the grower. For example the consumer will decide the punnet size of strawberries and the distribution chain will determine the number per outer, as well as the size and shape of the outer.

Growers and packaging suppliers must work within these constraints, no longer can pallet manufacturers or truck manufacturers determine the pack specifications. Our business must be market driven.

No longer do European users of fruit and produce packaging have a choice between a composite pack (one that is a combination of cardboard and or plastic or timber) polystyrene or cardboard—that has been decided for them by the legislators. It has not been initiated by the packaging companies, horticultural industry, the distribution chain or the retailers.

You only have to look at Europe and Japan to see what will be legislated for if we do not change our thinking voluntarily.

In Japan the legislators will ban Expanded Polystyrene in 1994 and have already banned the imports of products in steel drums. We use more Polystyrene fruit trays than most if not any other country. This is causing a major problem to retailers because more tips are refusing to accept this bulky non returnable product, so the disposal costs are very high.

Wax is another 'no-no' for recycling, so all waxed boxes will be redesigned with different materials. This one will require a complete change in all our thinking and a re-education on how we handle boxes without wax.

Replacements for these products have already been designed and market tested by our R & D teams.

The P84 tray This tray is fully recyclable so chain stores can crush empty trays in with their normal cardboard boxes and return the bales to us for recycling.

Sigma cote waterproof coating In the past the problem with any real waterproof coating was that we could not print or glue after it was applied. With this new development this can now be achieved.

Moulded pulp trays A new development by a Japanese company gives this product a much smoother surface, fully water resistant and fully recyclable. This will replace plastic inserts in trays to Europe first, then I believe here as well.

Steel drum replacement An Amcor new development will replace steel with cardboard for all export bulk liquids and powders and over time domestic as well.

Waste Collecting in Germany

To assist in implementing Germany's new laws to prevent and reduce the incidence of waste, a company called Resy GmbH has been formed to organise the disposal and recycling of boxes made from paper or cardboard.

Resy is the owner of the Resy symbol and any box with this symbol on the bottom will be recycled by them.

Amcor has been granted the rights to use this symbol and if you use boxes with this symbol it guarantees the box is fully recyclable and satisfies German law.

This symbol is fast becoming an internationally recognised among Packaging Companies around the world that the

pack is fully recyclable. Any export packaging could, and may be should, have this symbol on the bottom of the box together with the licence holders number.

Points on Packaging Requirements

In a recent paper given by Peter Waldheuer of Edeka in Hamburg, he emphasised the requirements the distribution trade places on packaging design.

Some of these requirements include the following:

- **The transport pack should be an open tray**

In the retail store the traditionally sealed transport pack must be opened to permit employees to price the product and put it on the shelves. Opening a carton requires up to 5 manual actions taking some 4-5 seconds per pack. Savings in work can be made by appropriate design of the transport pack. It should also be noted that most accidents occurring to employees in retail stores, as well as innumerable cases of damage to goods, occur during the opening of transport packs with carton knives.

- **The transport pack should be designed to be open to the extent that each unit (consumer pack) therein can be reached with the pricing unit and it should contain only one layer of consumer packs**

In spite of the electronic registering methods of scanning and price call-up, most retail stores must be able to label the consumer pack with the price. This time-consuming work can also be significantly accelerated when the transport pack is designed in such a way that pricing can be carried out without the consumer packs having to be removed from the transport pack.

- **12-15 kg per transport pack weight limit**

Collin Sharp was employed by UEB Packaging in New Zealand for 28 years where he had 6 years on the New Zealand Apple and Pear Board Technical Committee and for the last 5 years heavily involved in the development of corrugated packaging in the New Zealand kiwifruit industry.

Collin came to Australia for a change in climate and is now employed by Amcor Fibre Packaging in Sydney.

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It is well known that even with the use of technical aids, transport packs have to be handled manually in central warehouses and retail stores. Ergonomic findings indicate that weaknesses and damage to health can arise among employees when they regularly have to move transport packs weighing more than 12-15 kg.

• **Transport packs should be designed to be colourful and sales-promoting**

Where goods are presented in transport packs in retail stores, there is the risk that the customer is presented with shelves and aisles in which the carton colours of brown and grey predominate. Since, however, transport packs have in general larger printable surfaces than consumer packs, opportunities exist here for brand-specific designs.

• **Front side = narrow side of the transport pack**

Small area retail stores generally have shelves and baskets which are relatively short. To make presentation in transport packs possible, the advertising should show to the narrow side of the transport pack.

• **Transport packs should be manufactured exclusively of paper, cardboard or corrugated cardboard**

A requirement that comes under the heading of making the product "environmentally friendly". Transport packs have to be disposed of initially in the retail store. In order to avoid additional costs arising from costly separating work and additional requirements for space, as well as to prevent transport packs landing up on rubbish dumps, a transport pack should be made of:

- a. as little as possible but as much as necessary, and
- b. the packing materials used should not be a mixture of different types, should be easy to dispose of and should be recyclable.

In connection with the above, the following point should be made clear:

- a. in practical terms at retail store level, packing material can only be collected for subsequent recycling when it is of paper, cardboard or corrugated cardboard, and
 - b. disposing of polystyrene, plastic or foil puts an additional load on the costs for this work.
- **The dimensions of the base of the transport pack must conform with the conditions set by the modular system (300 mm x 400 mm or 400 mm x 600 mm)**

The base of the transport packs should conform to the ISO module of 400 mm x

600 mm. The dimensions should be selected in accordance with the rate of turnover of the article in question.

It should be noted here that the dimensions of the ISO module are nominal dimensions. Pack-tolerances and gaps between packs on the carrying device should be subtracted; pack-tolerances should not be permitted.

The above dimensions apply exclusively to the base of the transport packs. It is, however, conceivable that the height of the transport packs should also be oriented on the above-mentioned 400 mm x 600 mm series of dimensions.

• **Taking into account environmental protection legislation**

The German Packing Order of June 1991 has raised questions on packing and in particular one-way packs, the material thereof, as well as the method and cost of disposing of packing materials.

The German Packing Order with its rigorous official regulations for the trade has come into full effect from 1 January 1993. This means that all packing material has now to be collected and re-utilised.

The objective of these official regulations is to free the public refuse disposal systems from all packing materials.

In other European countries, the legislators are not just standing by and watching the continuously growing flood of packing material. The French have already announced the adoption of a similar system.

The Local Scene

We must reduce the number of pack sizes and these must be modular. With the emphasis on fresh is best the supermarket chains are supplying smaller quantities of fruit and vegetables to their stores more often, to ensure the produce does not sit on the shelves too long. You only have to visit the supermarket distribution centres to see the problem they have trying to stack small quantities of the hundreds of different footprints that have been designed and developed by growers over the years.

The pressure is on now to reduce this number and we should be able to reduce these hundreds down to under 10 and these must be modular. This will be driven by the supermarkets. We should not need regulations, but if we do not learn we can expect this to be done for us.

At this stage, although a lot has been done, Australia is still not fully committed to export at any level. There appears to be still a lot of groups or individuals who are bending the arrow. When a grower can decide what quality packaging he will use

for export without any research we have a long way to go.

We can certainly learn a lot from countries like South Africa, Chile and New Zealand who have the right infrastructure in place to ensure quality of both packaging and produce.

The Marketing Manager Fruit and Produce for Nampac, a major packaging company in South Africa, recently visited Australia. He could not believe how cheap fruit and vegetables are in Australia.

He believes South Africa had a similar problem until they dedicated themselves to long term export. The domestic market sometimes suffer as a result of local shortages due to satisfying export demand but overall the returns to the growers are higher.

We are the closest to the largest growth market in the world and I believe this export area to have the potential to having a major impact on the unemployment and financial problems of Australia. I dream of the planting, pruning, picking, packing, shipping and of course invoicing as the recession buster for Australia.

Palletisation

Palletisation is another area that will be looked at in the future.

This is for both unitisation, movement by mechanical means and utilisation, the maximising of all available space in all forms of transport and storage for freight reduction and better post harvest handling.

To obtain the best results we must work backwards from the space available but naturally taking into account the customers requirements. Overseas information is available showing customers' requirements fitting into the correct sizing for maximising utilisation and unitisation.

As you know the 1164 x 1164 does not fit an ISO container or reefer shipping.

Export may and probably will require different size outers to local and definitely will require different materials to local.

Packaging companies like Amcor are committed to the future in this area. At each plant we employ experts who are available to our customers to work together to maximise the savings in both materials and freight. Industrial customers realise that packaging and freight are normally a very high percentage of their total costs.

Requests for services in this area is taxing our facilities to the extreme. In the past, the outer packaging for industrial customers was the last thing they thought of. Marketing decided on the size and shape of the inner, whether it was a glass bottle, plastic bottle or fibreboard carton.

This was decided on without any thought to total packaging costs or freight costs. The innovative customers are now asking us to work with them in the very beginning. They have realised that if we can change the marketing idea by the odd millimetre in length, width or depth, without effecting the market appeal or concept

we can save them 15% to 25% of their total packaging and freight costs for that product. This is working smarter not harder.

We must also work smarter in the horticultural area. There is a wealth of experience and knowledge out there and we must pull it all together and work to a common goal, with no one bending the arrow.

We have people travelling overseas as you do and we also have available contacts all over the world who are available and willing to help you in any way they can.

The Packaging Industry as a whole are here to help your industry and we look forward to a more involved relationship in the future.

Carton Design For Handling And Cooling

By Harry Debney, General Manager, Visy Board Queensland

Unitised handling is used for fruit and vegetable distribution to minimise handling and freight cost and to reduce physical damage.

In handling fruit, vegetables and cut flowers, unitising means 50 to 100 boxes or cartons of produce can be secured to a pallet or other base and the total load transported as one unit rather than many smaller units.

Two conditions must be met for unitising to be successful. Firstly, the units, which are formed on a horizontal base such as a pallet or slip sheet, should be aligned vertically. Secondly, the load must be held securely. Cartons should not move from one column to another or from the stack completely. Simple cross-stacking of cartons on a pallet does not form a

stable unit for transport without some means of restraint.

With avocado trays it is common for cross-stacking to be used to provide a simple means of stabilising the load. Whilst this assists in handling, it can cause problems with carton damage.

Avocado corrugated fibreboard cartons are designed to provide maximum strength when stacked directly one on top of the other with the side walls vertically aligned. Much of the strength is lost when trays are cross-stacked. The best compromise is to column stack the first three or four layers on the pallet. These trays take the highest compression load and are most susceptible to damage. The rest of the load can be then cross-stacked for stability.

A minimum of 4% venting of the package surface area exposed to cooling air is required for efficient forced-air cooling. To allow for over filling of boxes and misalignment, venting of at least 6% is required.

The current practice for corrugated fibre boxes is to vent the ends section of the package where column stacking is used. Preference is for long vertical ventilation slots which vary in length dependent on box depth.

For cross-stacking cartons with the correct length to width ratio, venting is provided in all sides.

Vertical slots accommodate problems of misalignment caused by overpacking and variations in height of stacked columns on the pallet.

Childers Avocado Grower Packs Above Standard For Better Prices

From Queensland Fruit & Vegetable News 26 August 1993

Packing above the minimum grade standard may seem an unnecessary waste of time and fruit, but it has certainly paid off for two Childers growers.

Tom and Donna Duncan said their packing 'system' involved throwing away fruit which many growers would market but it had paid off in the long run. "We've always packed above the grade standards, and we've always got \$2 or \$3 above the market price," Mr Duncan said.

"We are still getting the top of the market for our firsts, and our extras are going over that price. Because there's so much good fruit these days, fruit has to be really good to attract the top prices. And you won't get that with average fruit."

Mr Duncan said most growers were using the avocado industry's standards charts for the wrong purpose. "The standards chart is meant to show the worst

examples of fruit which should be packed in each category," he said. "However, most people think it shows what all the fruit in each grade should look like.

"This results in them trying to get as many second grade fruit into first grade as possible, and what should be reject fruit into second grade. They usually end up getting a second-class price for their firsts anyway, even though they think they're making more money by packing as much fruit as possible."

Mr Duncan said it was important every piece of fruit in a tray was of exactly the same quality. The grower will be paid in accordance with the quality of the worst piece of fruit in any tray," he said.

"That is the first, and probably the only, piece of fruit the buyer sees.

"I've seen a whole pallet down-graded by \$11 just because one piece of fruit in a

top tray was not up to the same standard as the other fruit."

Mr Duncan said formalised quality assurance (QA) programs would help standardise the grade standards for avocados. He said the packaging of avocados was also important, especially if establishing a name was part of your business goal.

"We try and have our name associated only with the best quality fruit," he said.

"Our 'Extra' and 'First' class fruit is packed in our own box with our brand prominent on each piece of fruit.

"Our seconds are packed in a 'generic' avocado box with a cholesterol free sticker on each piece of fruit.

"It takes a long time to get a good reputation with buyers, but not very long to lose it if your quality is seen to fall."

The Duncan's grow Fuerte, Sharwil, Hass and Wurtz.

AVOMAN IN NSW

By Ian Atkinson, District Horticulturist, NSW Agriculture



The AVOMAN project funded by the AAGF/HRDC levy aims to address issues of low orchard productivity and poor fruit quality in the Australian avocado industry.

To this end the AVOMAN team incorporates members from the Qld. DPI, NSW Agriculture, WA Dept. of Agriculture and Piccone Horticultural Consultancy. We all play a part in the overall AVOMAN project with specific tasks both within the team and with our grower clients.

Ian Atkinson, District Horticulturist, with NSW Agriculture based at Mullumbimby, is the AVOMAN team member within NSW.

Regional Groups

The project is being developed in conjunction with "Regional Productivity Groups" (RPG's) consisting of six to ten participating growers in each group. These groups will be providing information, supplying feedback to the AVOMAN project and sharing information within the RPG's on improved management.

Two RPG's have formed in NSW, one based on the Alstonville Plateau and one in the Mullumbimby/Burringbar area. More groups were initially planned but funding cutbacks have limited the scope

of the project.

The Alstonville Plateau group first met in December 1992 and have met on growers properties four times to discuss issues including pest and disease control, tree canopy management, phytophthora management and fruit quality at the retail level. Several members of the Alstonville Plateau group were involved in the Sydney Retail Survey during August.

The Mullumbimby/Burringbar group got together in January this year and have had farm walks on subjects such as fertilising avocados, young orchard management, canopy management and organic production. As with the Alstonville Plateau group growers have learnt from the good and bad experiences of fellow growers.

Sydney Retail Survey

In early August this year five growers from NSW participated in the third Sydney retail fruit quality survey. Organised as part of the AVOMAN project by Scott Ledger (QDPI), you will see the results reported on the next page. However, the growers who assisted, all gave the visit an emphatic 'thumbs-up'.

Everyone learnt a great deal about the 'unseen' part of your industry—the marketing chain. To see the good, the bad

and the ugly first hand was a very productive exercise for all concerned.

What Next?

Growers in the group will by now have the latest AVOMAN recording sheets which will provide data to begin fine tuning the Management Support Database. Whilst paperwork and data collection are universally disliked by growers and extension workers, we cannot finetune orchard production without good information.

We are currently considering a local retail fruit quality survey before going on to on-farm quality surveys. The role of the RPG's within this project will continue to develop with time and in accordance with the wishes of the growers and AVOMAN team.

Want To Get Involved?

Unfortunately the 50% funding cut for the 1993-94 financial year limits expansion of the project. However feel free to contact me at NSW Agriculture, PO Box 9, Mullumbimby NSW 2482 (Ph. 066 842100) to discuss AVOMAN.



Examining avocados from Flemington Market. From left, Alstonville growers Tony Walker, Dick White, Scott Ledger (QDPI Brisbane) and Bonnie Walker.



Fruit on sale at Sydney's Flemington Markets. Green Pigeon fruit was not tested.

To Market, To Market; To Buy Avocado. Home Again, Home Again; Without Our Bravado.



By Terry Campbell, Queensland Department of Primary Industries, Mareeba

"To market, to market, to buy avocado. Home again, home again, without our bravado;" This was the way one participant in the Avoman retail quality surveys in Sydney summed up the feeling after cutting up 600 avocado fruit to look at the quality available to consumers. As Scott Ledger reported in "Talking Avocados" in August, avocados look pretty tatty at the retail level and it was easy for avocado growers to be disappointed.

The latest survey has identified similar problems to those reported by Scott. Table 1 lists the results. About one quarter of avocados available for sale in Sydney are unacceptable. A further 35% had minor problems (you could cut the bad bits out). About 40% had no defects.

These are very disappointing results and could easily be used against the avocado industry. Can you imagine the headlines.

"Consumer Group Warns: Avocados a Bad Buy"

Hopefully, we can solve the problems before Choice Magazine discovers them. But what can we do? I've been thinking about the results for the last month or so and would like to share my thoughts and reactions.

It's not my problem!

It is hard to believe that the fruit which ripens so well on the farm, is so disappointing at the retail level. The first reaction is that the results are due to retailer or consumer handling problems. Certainly the Avoman surveys have identified that many of the problems even the disease problems are exaggerated by the way avocados are handled and sold.

But really, it is our problem. It is avocados that are being rejected by consumers. Let me tell you of one consumer's reaction. While in Sydney, I visited

friends at Elizabeth Bay. They told me they don't buy avocados any more, too many are brown inside. Like the correspondence from the Kepple Bay Sailing Club (Talking Avocado August 1993) for many consumers avocados are "off the menu".

Expansion of the avocado market will be restricted until the problem with internal quality are solved.

Where does the fault lay. On the marketing survey, there was no shortage of scapegoats.

Six Scapegoats

1. The Kiwis

This was the reaction after survey #1, when New Zealand fruit were compared with north Queensland Shepard and Southern Reed. Much of the New Zealand fruit showed internal discoloration consistent with fruit rots, bruising and/or cold damage. It seemed logical then to assume that the severe damage was the fault of the New Zealand production and handling system. A defence for the New Zealanders was that it was late in the season.

However the second survey showed that Australian lines of Hass had similar results and problems. The damage could not be attributed to one particular fault in the handling system.

2. Hass

After survey #2, all eyes were on the Hass lines. Scott Ledger wrote in his August article, that judging Hass ripeness was difficult, skin colouring and softness were out of synchronisation. Retailers were offering and consumers were choosing, overripe fruit. This made Hass look worse.

However (that word again), survey #3 showed that Hass and Fuerte were the

same, (both bad). In any case, defects on green skins are more easily detected and the retailer could well be removing these from the display.

3. The Consumer

It's true that consumers do a lot of squeezing in search of a ripe fruit—nearly everyone does. From observation, most consumers were buying only after their thumb detects that fruit is softening or ripe. In the process, fruit is bruised.

However, much of the damage reported in the surveys is not a result of consumer bruising. And it is our marketing system which fails to differentiate between ripe and unripe fruit that necessitates this constant need to squeeze and poke fruit. I have to admit that I squeeze my way through avocado displays.

4. The Retailer

Few retailers differentiate between ripe and unripe fruit on the displays. Fewer still ripen fruit at preferred temperatures. Retailers surveying often hold fruit as low as 4°C and ripen at anything from that temperature to ambient either in the air-conditioning or out the back. Handling systems vary enormously.

However, avocados are a very small product line for retailers. Consequently, few have facilities to ripen fruit at 18°C. Even retailers with a good system still have problems. Some store owners report they discard 30% of avocados and one shop where customers are more vocal reported consumer returns of 10%. Growers might not like the way retailers handle their fruit but retailers aren't that keen on avocados either.

5. The Wholesaler

In survey #2, only 14% of the avocado lines purchased had been ripened by the wholesaler. This is despite the promotion to wholesalers of controlled ripening with ethylene. It is only early in the avocado season that wholesalers regularly ripen avocados.

However, recent work by DPI has confirmed what many retailers have told us, that avocados go too quickly from sprung to overripe. Because of low demand for avocados, neither retailers or wholesalers have the flexibility to be able to regularly

Table 1. Avocado Internal Quality - Sydney Retail Survey Number 3, 5 August, 1993

Variety	Number of Lots Sampled	Fruit Acceptability (%)		
		Unacceptable	Minor Problems	Number of Defects
Fuerte	3	32	41	27
Sharwil	4	17	49	34
Hass	23	28	32	40
Edranol	1	0	15	85
All varieties	31	26	35	39

Levy Management Unit

Collection Fees

The Levies Management Unit (LMU) collects over 40 different levies and charges. The complexity of collection of each levy depends on the legislative provisions involved, the attitudes of individual levy payers towards the levy (if many people in an industry are resistant towards paying a particular levy then the collection process will be more involved and time consuming), the number of levy payers and the frequency of returns.

The LMU, when auditing individual levy payers often checks more than one levy at a time. For example, if a firm pays both the avocado and apple and pear levy, then when it is audited, both levies are checked at the same time. Also, the amounts paid by individual levy payers varies greatly. For example, Australia's largest levy payer would pay more than \$1 million per month whereas the smallest would pay less than \$50 per month.

Given these circumstances, it is not appropriate for the LMU to base its fee for collecting levies on each receipt or a flat fee for each collection point, regardless of

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ripen fruit. Too often, they are left with overripe fruit to sell cheaply (which every grower hates) or dispose of them.

6. Other Growers

Certainly, some lines are worse than others, just look at the photo on the back cover. There is variation between growers even when the handling systems are similar. It is easy to blame other brands.

However, there is no logic in which lines are causing problems. Out-turn trials in north Queensland have shown that even growers whose tree nutrition and spray programs are very thorough, have problems when ripening conditions are sub-optimal. Fruit from five different trees in the same orchard in 1993 showed completely different results for disease breakdown.

Conclusion

The conclusion is that no one in particular can be blamed for the problems encountered. The problem is with the current handling and marketing system and no one part of the system is at fault.

We still need to find a solution to the problems. I will discuss some possible solutions in the next edition of *Talking Avocados*.

the amount collected. The way by which the LMU determines its fees is to estimate the total amount of effort in terms of staff years that is likely to be spent in the collection and audit process during the financial year and charge on that basis. The LMU considers that this is the most equitable method of cost recovery for all corporations.

In general, the two most important variables in determining the charge are the number of levy payers and the number of times each year that each payer needs to submit a return.

In 1992/93 the LMU estimated that approximately 0.5 staff years was involved in avocado levy processing and auditing. This represented a charge of \$30,000 for that year. The anticipation is that a similar amount of staff time will be involved in 1993/94.

Timing of Charges

The LMU generally makes a determination of charges about the middle of each financial year (in 1992/93 for example the determination was made on 30 December 1992). The mid year timing allows the LMU to assess the trends for the financial year and to refine budgets and charges as necessary. Corporations and representative industry organisations are then advised of the determinations as soon as they have been made.

Following the determinations, the LMU sends debit notes to each Corporation to recover the charges. The charges are recovered in three instalments, the first, representing 50% of the charge is payable

at the end of January, the second of 25% payable at the end of April and the remainder payable in early June.

Timing of Levy Payments

The LMU operates a variety of levy payment times. Annual returns, annual returns with six monthly instalments, quarterly returns and monthly returns are all catered for under legislation. The determination of the frequency of returns is determined by the LMU in consultation with industry.

As it costs the LMU the same amount to process a cheque for \$100,000 as for \$100, it means that the higher the frequency of returns the greater the cost of collection. Offsetting this, cash flows for monthly returns are more rapid than for quarterly or annual returns.

At present, the avocado industry (and most of the other smaller horticultural industries) have elected for quarterly returns in order to provide for a balance between cash flows to corporations and collection costs. The LMU considers that this arrangement is the most appropriate for avocados.

Statistics

No specific decision has been made as to which method is to be used to produce statistics. However, the LMU has provided some statistics to industry organisations and is close to finalising collection statistics for the financial year 1992/93. These figures will be released in the form of a statistics book shortly. A copy of the part relating to avocados will be provided to the AAGF as soon as it is completed.

Workshop on Fruit Spotting Bug

Two growers, Don Lavers from Atherton and John Bolton from the Sunshine Coast, represented the growing sector of the industry at a fruit spotting bug workshop held in Mareeba in July. The workshop, which brought together a large number of research entomologists and extensionists, was sponsored by the Co-operative Research Centre for Tropical Pest Management (CRC). Fruit spotting bug research was reviewed and both short and long term strategies were developed to improve monitoring techniques, to develop IPM programs and to reduce reliance on one control chemical.

A number of research projects and collecting programs suggested at the workshop have now been put in place by researchers from CRC and DPI and an approach may be made to industry to assist with the funding of these important research projects.

The Atherton Avocado Association congratulates the CRC on its co-ordinated program to combat a pest that has been problematic and expensive to the industry and which seems to defy growers attempts to reduce their chemical usage.



R&D Planning Now In Full Swing

By Gerard McEvelly, Program Support Manager, Horticultural Research & Development Corporation

The HRDC will shortly be calling for applications for research and development funding for the financial year 1994-95. Ideally, both researchers and all sectors of the avocado industry are constantly thinking about ways in which R&D can help to improve efficiency and profitability. However, the weeks ahead, leading up to the mid-February deadline, should bring an increased emphasis on consultation and fine-tuning of submissions to ensure they address vital industry needs.

The application packages sent by HRDC to researchers includes lists of

industry priorities, as developed by each sector of horticulture. A set of guidelines urges applicants to target these priorities and also to seek guidance from growers, packers, shippers or whoever their project may affect to make sure that they are on the right lines. So if you find yourself being interviewed by a prospective researcher, you'll know why!

The HRDC places great emphasis on its role of helping to bridge the gap that has sometimes opened in the past between the industry on one hand and the R&D community on the other. In the few years that the

Corporation has been in existence that gap has narrowed as both sides have appreciated how mutually dependent they are.

If the industry fails to move forward by developing and adopting new technology, it will slip backwards compared to all the innovative competitors. Likewise, if researchers fail to direct their skills towards solving acute industry problems, then they will fail to attract the funds they need.

With this in mind, the HRDC application 'form' (usually completed on computer disk these days, rather than on paper) asks for details on just *how* the project will address industry needs, *what* would be the specific benefits to the industry of doing the project and *which* methods will be used to communicate the new "information" to industry and encourage its adoption. Not a case of throwing obstacles in front of the researcher (although it may have been seen that way a few years ago), but to help the HRDC Board of Directors and the Avocado R&D Committee assess the true likely value of the work.

All this means that applications are becoming more and more clearly focused each year. The primary reason for rejecting applications now is "lack of industry funds", rather than "failure to address needs of industry". This was particularly the case with the avocado industry this year, which was disappointed to find that no new projects could be funded in 1993-94.

This was due to an over-estimate in the previous year of the likely receipts from the Avocado levy. This resulted in the levy account being overspent in 1992-93. Although the shortfall has now been almost entirely clawed back, this has only left enough spare cash to fund two continuing projects in 1993-94, and no new ones.

However, the story for 1994-95 should be much happier. After the initial hiccup, the levy collection system set up by the DPIE with advice from the industry is reported to be working very smoothly. Also, crop estimates are tighter and from now on it should be possible to forecast the levy income and resultant R&D funds much more accurately. This should make it easier for the industry and researchers together to establish an increasingly powerful and effective program.

HRDC PROJECTS COMMENCED PRIOR TO AVOCADO LEVY		
AV004	Population dynamics and biological control of the avocado leafroller in North Queensland	Final Report due December 1993
AV010	Curing 'Hass' avocados for cold storage disinfestation against Queensland fruit fly	Final report completed. Submission to Japan underway
AV018	Production of clonal avocado rootstocks and the evaluation of their performance	Final Report due December 1993 - wide scale commercial trials planned
AV033	The relationship between carbohydrate levels and productivity in the avocado and impact of management	Final Report due December 1993
AV067	Avocado R&D Planning Meeting	Final report available "The Australian Avocado Industry R&D Plan 1991-1996"

PROJECTS FUNDED IN 1992-93		
AV004/AV010/AV018/AV033		As above
AV203	Optimising disinfestation and storage qualities of avocados	Further work held over while overall submission on disinfestation is prepared
AV207	Biological control of Anthracnose of avocado	Continuing in 1993-94. Progress report available. Includes funding from NZ Avocado Export Council
AV208	Avocado and rockmelon processing for the domestic and export markets	Not supported from avocado levy in 1993-94
AV209	Improved management of avocado productivity and quality	Continuing in 1993-94. Progress report available and regularly reported in Talking Avocados
A total of 8 projects were supported from the levy, while an additional 6 projects were rejected		

PROJECTS FUNDED IN 1993-94		
AV207/AV209		as above
AV307	Salt tolerant rootstocks for Riverland conditions	Funded with voluntary contributions from SAAGA & Sunraysia AGA
A total of 2 projects were supported from the levy, while an additional 7 were rejected		

Nursery Trees - Are They The Right Ones?

By Ted See

Following the disastrous rains in 1974 when 50% of bearing trees were lost through phytophthora, the avocado industry has been concerned that every effort be made to ensure that nursery trees be free of disease. Is it time to ask "Has production been overlooked"?

Most of us have a few, well we hope only a few, trees which do not pay for the space they occupy. They are vigorous and healthy but... It is a well known fact that trees that regularly produce heavy crops do not make a lot of strong vegetative growth. It is important that nurseries select their scion wood from productive trees so that we have a program of plant improvement.

Those of you who have a knowledge of the pineapple industry will be aware that the elimination of off-type plants played a major part in increased production. In more recent years, planting of improved clonal selections demonstrated the improvements to be gained by careful selections for size, shape and quality of fruit. It is this program of plant improvement together with the monitoring of soil and leaf nutrient levels which have put the Queensland pineapple industry on a competitive basis with low labour cost countries.

Plant improvement in avocados is a little more difficult. We have to consider three aspects; the root stocks; the scions; and compatibility between stock and scion.

There would appear to be little enthusiasm within the DPI to adopt long-term

projects such as plant improvement. This attitude is in part due to current funding policies, which effectively is for projects lasting up to three years. It is essential that we make a start so that our avocado farms may remain viable at a time of higher production and marketing costs.

Tree Propagation

First of all select your highly productive trees. There are quite a number of trees throughout the district which regularly produce 60 or more trays per year. Our objective is to bring the overall farm production up to that figure. How can the average avocado farmer go about this?

You may already have a highly productive tree in which the main grafted section has died back to the original rootstock. The "Brokaw" method of using nurse seedlings to start rooting of cuttings can be mastered with a bit of extra effort. If you feel that is beyond you, allow the original root stock to develop and produce seed. If an old tree is cut back hard to just above the graft it will often produce a strong shoot from the original rootstock which can be a source of seed.

The seeds from the original rootstock will be very close genetically to the that rootstock. These seeds can be used to produce seedling trees for grafting of scions taken from the original parent or a tree of the same variety. There may be compatibility problems if worked with another variety.

Trial work in Israel has shown that the selection of superior rootstock which was

grafted with scions selected from highly productive trees resulted in increases as high as ten times the average yield of field trees.

This may seem an optimistic figure. I would point out that our commercial nurseries have concentrated on imported rootstocks which have not been assessed commercially. No systematic recording of yields or selection of scion trees on their performance is in place to my knowledge.

We have now a situation where the most productive avocado orchards in the district are those where progressive growers have made their own selections for raising rootstock seedlings and have grafted these to their own best trees.

It is time the industry had a critical look at the criteria for the approved avocado nurseries. It is not sufficient that the nurseries promote disease-free trees. We desperately need disease-free trees which are the progeny of rootstocks and scion trees of known performers. The answer to non-productive trees is not to sell the client another tree!

Ted See has spent his whole life in the fruit industry. He was a senior district horticultural advisor in central Queensland and served for some time in the United Nations agricultural organisation. Ted has grown avocados for 20 years at Montville and currently is a part-time horticultural consultant.

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This is important, because putting a submission together does take a considerable amount of time and effort. Just as there are many researchers competing for a finite pool of funds, there are many horticultural and other industries competing for the best of Australia's enviable reserve of research brainpower. If researchers are aware of the steady stream of avocado funds they will be more likely to address the avocado industry needs.

It is also important to remember that, apart from the *running costs* of the projects which are funded from the R&D levy, research agencies themselves invest heavily in the *infrastructure and salaries* required to keep

research staff "ticking over". Future investment is clearly targeted at those industries willing to invest in R&D themselves.

In addition to the levy-funded projects, the Corporation can still support projects funded with voluntary contributions under exceptional circumstances. In 1993-94, one project is being funded in this way. Prior to the levy, of course, all HRDC avocado work was funded from voluntary contributions.

R&D Prospects For 1994-95

With an estimated crop of 16,000 tonnes attracting a \$5/tonne R&D levy, the levy collected in 1993-94 should amount to roughly \$80,000. The addition of dollar for dollar matching funds, less levy

collection costs and the 7% HRDC running costs, should result in a budget for Avocado R&D of roughly \$140,000. This is well short of the amount that would be required to fund all the likely applications. However, it does provide scope for a wider program than in the current year. Many important industry concerns raised in the industry's Research and Development Plan have yet to be addressed, so there is plenty of potential for the industry to benefit from very real improvements in the next few years.

For further information on any of the projects listed above, or on any other R&D related issue, please contact HRDC on 02 418 2200, or fax 02 418 1352.

Horticultural Corporations, Have They Affected The Avocado Industry?

By Orf Bartrop

There are many diverse opinions as to the benefits of the avocado industry belonging to the Horticultural Corporations, especially the Australian Horticultural Corporation (AHC). Their effectiveness in collecting levies via the Levies Management Unit and in utilising these funds has been raised on numerous occasions. The Federal Government mounted an enquiry to assess the effectiveness of the AHC. Avocado growers now have to ponder the wisdom of joining these organisations.

Most avocado growers agree that research is an essential ingredient to a successful industry and that the Horticultural Research and Development Corporation (HRDC) is a reasonable vehicle for furthering research.

What has been Achieved?

From the standpoint of the industry, what has been the effect of belonging to the AHC and HRDC? Some say very little, some say the effect has been considerable. Where does the truth lie?

Rather than state the various attributes of these two organisations, this article will examine the overall effect of the industry's association with these organisations.

Historically, before joining the HRDC and AHC, the industry was involved in two workshops that examined the then current situation and where the industry would like to be in five years time. Goals were identified and the method of achieving those goals determined. The idea of joining these corporations acted as a catalyst and started the ball rolling.

A Strategic Plan

From those very workshops came the seed of the first benefit of belonging to the AHC and HRDC, a five year industry plan. Never before had the industry been so united that it could sit down and develop a comprehensive plan; a plan that defines what needs to be achieved and who is to co-ordinate the development of each activity. The creation of a "Strategic Plan" was a major factor in strengthening the avocado industry through unification.

Research

Before joining the HRDC, the industry suffered from an uncoordinated and fragmented approach to research and development. Each State avocado organisation determined its research priorities and depending upon the availability of funds

and research facilities, endeavoured to solve what problems it could.

Since joining the HRDC, not only has the money available for research been increased dramatically by grower levies, it has been further increased on a dollar-for-dollar basis by Federal Government research grants.

This has changed the emphasis from 'what can we afford' to 'which project has the highest priority', a change that has far reaching benefits to the industry.

In addition, under the co-ordination of the HRDC, the quality of research is maximised by having it conducted by the most appropriate research facility. No longer is research limited by State borders. Now any research institute can propose research projects best suited to its own facilities and also make a bid for research projects emanating from the industry's Strategic Plan.

Quality Standards

Quality standards in the avocado industry have been an enigma. Some States have rigid government standards while others have no standard at all. Growers will recall the stories of trucks of fruit arriving at Flemington markets in Sydney, their load being examined by market inspectors, and if failing those inspections, then carrying on to Adelaide markets where government quality standards are no-existent.

This might still be the case but the co-ordinated efforts of the industry to introduce quality assurance (QA) schemes will eventually ensure that consumers are presented with "quality" avocados.

More and more packhouses are appearing, replacing the on-farm packing procedures of old. One could argue that this had nothing to do with joining the AHC. Perhaps so, but has a push for a better organised marketing arrangement and increased quality hastened the progress towards co-operative packing?

Management

This magazine regularly features reports on the Avoman project, or to give it its full title, Improved Management of Avocado Productivity and Quality. This project aims to help growers become better managers by providing training and decision aids (see Talking Avocados Vol 4, number 2). Although this project could be regarded as a research project, which it is, it goes much further in that it will eventually produce the tools necessary for everyday farm management.

Communication

The industry has long suffered from a lack of communication. Research projects have come and gone and growers are unaware of the results, in some cases, probably unaware of the project itself.

That has now changed. This magazine reports on the progress of all research projects and issues recommendations on completed research. Under the auspices of Avoman, actual procedures to be adopted to encompass research results will now be disseminated to growers. So not only will growers know what the results of a particular research project are, they will know how to implement recommendation from that research.

Talking Avocados

In the past, some State and district avocado organisations circulate to members a newsletter pertaining to mostly local matters. Then in 1990, along came Talking Avocados that was only distributed to subscribers. Unfortunately, due to production costs and availability of material for publication, the magazine was not as well read as industry leaders had hoped. It was not until 1992 that sufficient funding became available to produce the magazine that is now circulated free to all avocado growers in Australia. At last the industry has a vehicle for disseminating information to the people who need it.

Marketing

Leaving aside the effect promotion may have on marketing and prices received for fruit, belonging to the corporations has drawn growers attention to the benefits of group marketing organisations. These organisations also control fruit packing as well as marketing and give growers a better return for their produce than they could otherwise obtain as individual growers.

Summary

In summary, the fact that the avocado industry took steps to join the Horticultural Corporations has resulted in a beneficial effect to all avocado growers, without even considering what those corporations have done in their own right. The most noticeable effect has been the integration of the industry with all sectors co-operating and co-ordinating to an extent that did not occur before.

It is early days yet for the full benefits to flow from the corporations and only time will tell as to their effect on the industry.



Quality Management In Horticulture

The AHC & AQIS Schemes Explained

By Lyall Howard, AHC Quality Manager in consultation with Australian Quarantine and Inspection Services

The purpose of this article is to highlight the differences between the AHC's Australian Horticulture Quality Certification Scheme (AHQCS) and AQIS's Certification Assurance arrangements (CA). The following overview will explain the important role that both schemes play in improving the competitiveness of Australian horticulture.

The first point to note is that both schemes are based on the same internationally recognised "model" for designing a quality management system, ISO 9002. The fundamental difference being that the AHC scheme embraces all of the elements in the model, whereas the AQIS scheme differs in the extent to which the elements are required to be addressed.

Secondly, the focus of the AHC scheme is purely commercial and it is equally applicable in domestic as well as overseas markets. On the other hand, the AQIS scheme is designed to meet legislative requirements for export. These requirements are principally truth in labelling, phytosanitary certification and food health & safety standards. More recently, CA arrangements have been recognised by some interstate quarantine authorities as providing assurances for their purposes.

To appreciate the difference between the AHC and AQIS schemes and to understand how CA can be used as a stepping-stone towards AHQCS it is important to consider the history behind the two schemes.

Prior to July, 1991, all fresh produce exported from Australia was subject to mandatory end-point inspection. As AQIS moved towards full cost recovery, Approved Quality Assurance (AQA) arrangements were developed as an alternative to end-point inspections. AQA meant that a company could take over the inspection functions exercised by AQIS, subject to continuing monitoring of the company's AQA system.

When the Export Control Act and associated Export Control Orders were amended on 1 July, 1991, AQIS no longer had mandatory inspection responsibility

for "commercial" aspects of quality. AQA was modified to CA to incorporate phytosanitary requirements. Responsibility for the product quality meeting customer expectations was handed back to industry.

This is where the AHQCS scheme steps in. The new export environment requires industry to move away from an end-point inspection approach to quality and embrace the new philosophy of process management and defect prevention. This fundamental change will not happen overnight. It is only through a national body like the AHC creating the structure for this change to take place that there will be widespread adoption by industry of quality management.

Why is Quality Management Superior to End-Point Inspection?

An end-point inspection regime is an inappropriate technique for assuring quality in the 1990's and beyond. The new approach is to focus on controlled and systematic management of the production, packing and marketing process to prevent the occurrence of quality defects.

The old approach was to inspect out the defects at the end of the process. This was an inefficient technique because it wasted resources on products that were ultimately going to be rejected. It also put pressure on the inspector to pass borderline product and this tended to bring down the general level of Australian quality.

Quality management, therefore, is a practical technique for improving the efficiency and productivity of a business by eliminating waste and defective product at the earliest possible stage in the process. Quality management is also a marketing tool for a company because it provides the customer with confidence that the product and service quality will consistently meet an agreed specification.

The customer's confidence in his supplier comes from his knowledge that the supplier has a quality management system that has been certified by an independent body as conforming to the requirements

of an internationally recognised standard. This is the role of the AHQCS. The certificate issued by the AHQCS is recognised overseas and will be increasingly demanded by many overseas customers in the future.

The AHC and AQIS schemes are thus working together to provide our international customers with confidence that Australian products not only meets international regulatory standards but it also meets the commercial requirements of the customer.

There are now around 29 horticultural companies with a CA arrangement with AQIS and many of these are enhancing their quality system to reach the AHQCS standard. For example, Yandilla Park Ltd, the first horticultural company certificated under the AHQCS in June 1993, initially achieved a CA arrangement with AQIS. Mr. Chris Weeks, quality consultant at Yandilla Park said, "Since AQIS moved to full-cost recovery for inspections there has been a direct financial incentive for an organisation as large as Yandilla Park to be able to prepare our own phytosanitary certificates. Like Yandilla Park, other companies who achieve the CA standard will realise that they can get a whole lot more out of their quality system by developing it into a full ISO 9002 system eligible for AHQCS certification".

New AHC Market Analyst

The AHC has appointed a new market analyst, Tim Huber who will be responsible for crop forecasting, market/price reports, compilation of industry statistics, analysis of competitor activity and database maintenance.

Tim was previously employed as a marketing assistant at the NSW Grain Corporation and prior to that was an Agricultural consultant with Hassel and Associates.



Quality Experts Discuss National Educational Strategy

The Horticultural Industry Conference held in Canberra in June was the location for a meeting between quality experts from around Australia to discuss the development of a national educational strategy for quality.

The meeting was organised by Lyall Howard, AHC Quality Systems Manager and included experts from State Departments of Agriculture in NSW, Victoria, Queensland, South Australia, Western

Australian and Tasmania. Also attending were representatives from AQIS and the National Association Testing Authority.

Lyall Howard said the objective of the meeting was to gain consensus on the development of a national strategy in QA education and training for Australian horticulture and examine quality education for small businesses.

"A national strategy in education and training would maintain the correct

commercial focus on QA in horticulture, prevent duplication and waste of resources and provide an opportunity for quality experts to share information," he said.

Following the meeting a discussion paper is being prepared for circulation to the participants and representatives are checking the compatibility of the proposal with the State Departments' of Agriculture Corporate Plans.

Special Offer - Fresh Fruit & Vegetable Posters

A range of full colour "Australia Fresh" posters are now available at a special offer of \$1.00 per poster from Austrade.

The high quality posters feature different fresh fruit and vegetables and have been developed to facilitate retail promotion activities particularly in overseas markets.

The range covers avocados, asparagus, cherries, kiwifruit, cauliflower, chinese cabbage, strawberries, mangoes, white grapes, summerfruit, fruit mobile, vegeta-

ble mobile, nectarines, blueberries, broccoli, peaches, raspberries, rockmelons, lychees, onions, table grapes and tomatoes, just to name a few.

It is not just one poster on avocados but a series of information sheets. The range of information is clearly illustrated on the accompanying photograph.

For more information contact Austrade, Attn: Anne Hatzis, PO Box 55 World Trade Centre, Vic, 3005. Telephone (03) 284 3111 or Fax (03) 284 3100.



Australian Horticulture Quality Certification Scheme

During the Horticultural Industry Leaders Conference held in Canberra in late June, Yandilla Park was awarded the first certificate under the AHC's Australian Horticulture Quality Certification Scheme.

Senator Nick Sherry who presented the award said Yandilla Park is the first—it pioneered the program but others must now take up the baton.

The Senator said, "Yandilla Park must be

the example for more dedicated exporters and they must also attain this international standard, if Australia is to reach its potential as a major producer on world export markets. I can foresee a time, not too far distant, where this accreditation will be essential for continuing access to overseas markets."

Mr Lyall Howard, AHC Quality Manager, said "this achievement by Yandilla Park means their profitability will be enhanced by lower costs and improved competitiveness in the marketplace, and their customers can be 'assured' of a consistent product and service quality resulting in 'preferred supplier' status".

* Unless otherwise indicated, all articles in this section were prepared by Suzanne Conley, Australian Horticultural Corporation, Level 14, 100 William Street, Sydney 2001. ph. (02) 357 7000, Fax (02) 356 3661.

Branded Products

From NSW Farmer News, March '93

Horticultural enterprises will need to compete on a basis of vertical integration, geographic coverage and the ability to develop brands, according to AHC Managing Director Mr John Baker.

In Asia, the development of department stores, supermarkets and hypermarkets, combined with increasing levels of disposable income have seen sales of fresh produce increase.

In the EC, major retailers are forming alliances to improve supply assurance.

These developments provide an increasing opportunity for Australia to develop a significant brand presence. Consequently, the AHC has established a specific program based on the development of an export brand strategy.

Testing Fruit And Vegetables For Pesticide Residue

From NSW Agriculture Agfacts Agdex 201/687

NSW Agriculture and the Sydney Market Authority are carrying out a survey of pesticide residues in a range of fresh fruit and vegetables. The survey began in January 1989. The objectives of the monitoring program are:

- to sample fresh fruit and vegetables sold at the Sydney Markets and analyse them for a range of pesticide residues;
- to trace back to the grower any sample which is found to contain unacceptable pesticide residues;
- to take appropriate advisory or regulatory actions to ensure excessive residues do not occur again; and
- to provide information on pesticide residues in fresh fruit and vegetables.

Choosing Samples

Each week, officers from the Sydney Market Authority buy a selection of 10 fruit and vegetable samples from the wholesale markets. They buy according to a monthly schedule that takes into account seasonal availability and different production areas.

They buy the samples in complete packages, such as a tray of peaches or a carton of lettuce. Information is collected to allow the trace back of samples to the grower if required.

The officers bias the sampling towards finding residues; they choose crops likely to receive the most pesticide applications and target districts where pesticide use is believed to be relatively high.

The sample also includes the most popular fruit and vegetables as well as those crops perceived by the public as likely to contain pesticide residues.

Buying from the Sydney Markets allows produce from all areas of New South Wales and other States to be selected.

Testing for Residues

After purchase, the produce is taken to NSW Agriculture's Biological & Chemical Research Institute (BCRI) at Rydalmere. The fruit and vegetables are sub-sampled, processed by blending into a slurry, and extracts taken for various analytical tests.

Samples are analysed for residues of up to 24 pesticides. Not all samples are analysed for every pesticide. To minimise

cost, analyses are carried out for pesticides likely to be used on a particular crop and may include pesticides not registered on the crop (see Table 1).

Trace Back of Samples

Samples are traced back to the grower when a pesticide residue exceeds the maximum residue limit (MRL). The MRL is the maximum allowable legal level of a pesticide in food and should not be exceeded if good agricultural practice is followed. The MRL is determined by the National Health and Medical Research Council of Australia.

A 100 to 1000 times safety factor is built into the MRL to ensure consumer safety.

Trace backs aim to find out why a residue is excessive and prevent such produce from being marketed in the future. Detections above the MRL are traced back to the grower by the relevant authorities in each State. In New South Wales, individuals found using chemicals contrary to label directions can face prosecution and fines of up to \$20,000. Similar penalties exist in other States.

Samples grown in New South Wales are also traced back to the grower when a residue exceeds half (50%) of the MRL. These levels are considered undesirable and suggest the grower needs to improve methods of pesticide application.

What are the Results?

To date, 423 fruit and 1,086 vegetable samples have been analysed for the presence of over 25,000 pesticide residues. Some 98.3% of samples contained either no detectable residues or residues within legal limits.

Of the 1,509 samples tested in total, 25 contained a residue which exceeded the MRL. Fifteen of these were technical breaches in which low residues of a chemical were detected on a crop for which it is not registered.

MRLs were exceeded for three main reasons:

- due to residues of persistent pesticides in the soil;
- the use of pesticides on crops for which they are not registered; and
- incorrect use of pesticides on crops for which they are registered.

Residues of the organochlorine pesticides, BHC and dieldrin, belong to the first category. Both were formerly used to control insect pests in the soil and can persist for many years. They may be taken up by crops planted some years after the initial treatments were made. However, the levels detected in this survey were very low. Only one residue of dieldrin exceeded the MRL and that had been applied to a similar crop before these pesticides were withdrawn from agricultural use.

The five detections of fenvalerate, permethrin and furalaxyl, showed these pesticides were being used on crops for which they are not registered. An MRL of zero is automatically assumed for the presence of unregistered pesticides on any crop. However, the levels of fenvalerate and permethrin were well below the legal limits that exist on similar crops. Furalaxyl has no MRL on edible crops.

The remaining detections of chlorpyrifos and endosulfan exceeded the MRL on crops for which they are registered. The excessive levels could be attributed to the incorrect use of these pesticides. The most likely reasons are excessive rates of pesticide application or pesticide application too close to the time of harvest. Both the rate of application and withholding period (the time between application and harvest) are specified on the product label.

Twenty six samples were below the MRL but exceeding 50% of the MRL. On their own they provide no legal basis for regulatory action. They are, however, used to identify potential problems that may arise on specific crops.

The percentage of samples (1.7%) in this survey which contained an excessive residue is consistent with surveys carried out in other States and by the Federal Government.

Actions

Although the number of samples detected with excessive residues is very low, NSW Agriculture and the Sydney Market Authority are keen to eliminate the occurrence of unacceptable chemical residues in food. A comprehensive trace back mechanism has been put in place to follow up residue detections which exceed the MRL or 50% of the MRL.

Residue detections above the MRL are investigated by a Pesticides Inspector. The inspector visits the grower's property, checks spraying records and spray equipment. Possible breaches of the Pesticides Act (1978) are looked for and acted upon. Similar trace backs are conducted by the relevant authorities in each State.

Further sampling of produce or contaminated soil may be undertaken and the property quarantined. The grower is advised of correct spraying techniques, rates of pesticide application and withholding periods. The aim is to prevent the recurrence of unacceptable residues.

Where residues are below the MRL but exceed 50% of the MRL, the investigation is undertaken by an Advisory Officer. The grower is advised of correct spraying techniques to ensure such residue levels do not occur again.

Other Initiatives

A number of other initiatives are being undertaken by NSW Agriculture to reduce pesticide residues in food. These include research and advisory programs in integrated pest management, more efficient spraying systems, alternatives to pesticides (natural chemicals, petroleum oils and insect pheromones) and natural controls (bacteria, viruses, predators and parasites).

The monitoring of fresh fruit and vegetables from the Sydney Market will continue until October 1995, when the program will be reviewed. A similar range of produce will be tested for the presence of up to 26 pesticide residues and residues of the heavy metal cadmium.

Table 1. Pesticides Tested

Pesticide group	Pesticide	Trade name example
Organochlorines	BHC*	-
	DDT*	-
	dieldrin*	-
	endosulfan	Endosan Thiodan
	heptachlor*	-
	lindane	-
Organophosphates	azinphos ethyl	Gusathion Kilathion
	chlorpyrifos	Chlorfos Lorsban
	demeton-S-methyl	Metasystox
	dichlorvos	Vapona
	dimethoate	Rogor
	fenamiphos	Nemacur
	fenthion	Lebaycid
	methamidophos	Monitor Nitofol
	methidathion	Supracide
	omethoate	Folimat
parathion	Folidol	
prothiofos	Tokuthion	
Synthetic Pyrethroids	fenvalerate	Sumicidin
	permethrin	Ambush
Carbamates	methiocarb	Baysol Mesuroil
Miscellaneous Fungicides	captan*	-
	furalaxyl	Fongarid
	metalaxyl	Ridomil

* No longer registered for agricultural use in Australia

Do You Get The Drift

If you are involved in spraying, drift is a fact of life. As much as 30% of the total volume from a typical hydraulic sprayer consists of droplets so small that they are prone to drift even in the most favourable spraying conditions.

To the sprayer, drift represents not only waste but a hazard to himself, neighbouring properties, crops and the environment. Furthermore, a recent report by the Health and Safety Executive shows that spray drift is still a major concern to the general public.

Small droplets (those under 100 microns in diameter) are a source of drift in two different ways. Firstly, they may be directly carried away from the target in air currents during application. Secondly, if the small droplets evaporate before reaching the target, any involatile chemical fraction remaining behaves

like a smoke particle and is very highly drift prone. It is estimated that a 50 micron droplet has a life of only 12 seconds at 20°C and 80% relative humidity.

However, help is at hand. Recent research at Imperial College, London has shown that spraying agro chemicals with Codacide Oil can substantially reduce the risk of spray drift.

Codacide is no ordinary surfactant. It contains emulsifiers which enable the vegetable oil to envelope pesticide molecules in capsules of approximately equal size, which when added to the spray tank with water, form a controlled emulsion. The resulting spray consists of pesticide carrying oil droplets evenly distributed in the water, the great majority of which are much less susceptible to drift.

When sprayed through a range of flat fan nozzles at a pressure of 3 bar, a 2.0% Codacide oil-in-water emulsion produced an average of 79% less drift prone droplets than water alone.

Given all the other benefits of Codacide i.e. increased deposition and uptake on target, reducing chemical odour and rain-fastness within minutes. Farmers, spray contractors, councils etc. will find that minimum recommended rates work very well, and less water is required to wet the target.

The cost savings are in time, money and the environment.

Do you get the drift?

For more information on this subject, contact Spray Tech Australasia Pty Ltd on 075 960622 or fax 075 960616.

Progress Report On The Anthracnose Biocontrol Project

By Lindy Coates, Tony Cooke and Kathy Cannon, QDPI Division of Plant Protection, Indooroopilly, and Marcelle Stirling, University of Queensland Department of Microbiology, St Lucia

The "Biological Control of Avocado Anthracnose" Project is now in its second year. It is a joint project between Queensland Department of Primary Industries (QDPI) and the University of Queensland and is funded by the AAGF, the New Zealand Avocado Export Council/AG-MARDT and HRDC.

The overall aim of the project is to reduce the industries' reliance on fungicides by developing biological control for anthracnose in avocado.

The Problem

Anthracnose causes serious field and market losses of avocado fruit, particularly in susceptible cultivars such as Fuerte. In Australia, the fungus *Colletotrichum gloeosporioides* is the main cause of anthracnose in avocado, whereas in New Zealand both *Colletotrichum gloeosporioides* and *Colletotrichum acutatum* are important causal organisms.

Control of anthracnose is currently reliant on regular field sprays of copper-based fungicides and postharvest treatment with prochloraz (Sportak®). In the not-so-distant future, the use of fungicides may become restricted due to increasing consumer demand for residue-free produce.

The Australian and New Zealand avocado industries have taken the step of preparing for these inevitable changes by supporting the development of alternative disease control strategies through the anthracnose biocontrol project.

Background

Plant surfaces support a wide array of 'epiphytic' micro-organisms. Epiphytic micro-organisms are those which live on the surface of fruit, leaves and other plant organs without causing disease. Many of these epiphytic micro-organisms actually benefit the plant on which they are growing by inhibiting the development of micro-organisms which cause disease. These beneficial micro-organisms are called 'antagonists'.

The aim of the anthracnose biocontrol project is to isolate epiphytic micro-organisms (bacterial and yeasts) from

avocado fruit, leaf and flower surfaces and select from these antagonists which inhibit the development of the fungi which cause anthracnose. The best places to look for potential antagonists are orchards which appear to have some degree of natural biological control occurring, for example, unsprayed orchards which have very low levels of anthracnose.

Once we find these organisms, we need to test them extensively for their ability to reduce anthracnose levels in the field and after harvest. It is also very important to determine the mechanism by which these organisms suppress anthracnose development so that we can ensure that they are safe to use.

Progress To Date

Joint QDPI-UQ Studies

To date, over 1 000 bacteria and yeasts have been isolated from avocado orchards in South-East and North Queensland. These isolates were tested for their ability to inhibit fungal growth and spore germination of *Colletotrichum gloeosporioides* on artificial growing media (Figure 1).

It was found that approximately 100 isolates reduced fungal growth of *Colletotrichum gloeosporioides* to varying degrees, and approximately 34 isolates

also reduced spore germination by more than 80%.

Isolates which caused either type of fungal inhibition were then tested for:

- ability to reduce fungal growth and spore germination of *Colletotrichum acutatum* on artificial growing media. Results obtained so far indicate that approximately 70% isolates tested also reduced fungal growth of *Colletotrichum acutatum* to some degree, although only 8% of isolates reduced spore germination by more than 80%.
- ability to reduce lesion development in inoculated, detached avocado fruit. Each isolate was applied to the surface of freshly harvested Fuerte avocado fruit (Figure 2). Following this, fruit were inoculated with spores of *Colletotrichum gloeosporioides* or *Colletotrichum acutatum* in circled areas. Fruit were incubated until ripe and then assessed for anthracnose development within circled areas. Approximately 70 bacteria and 50 yeasts have been screened up to 3 times each using this procedure. Isolates which reduced lesion development (in comparison to controls) are currently being selected for further testing.

UQ studies

The effect of copper sprays on epiphytic micro-organisms is currently being investigated. Intensive sampling over a twelve month period has shown that copper reduces the number of most types of micro-organisms on the surface of avocado leaves, particularly bacteria.

Future Developments

During the next 12 months, we plan to test a selected group of antagonists for both preharvest and postharvest control of anthracnose. This means applying antagonists both in the field (as a spray) or after harvest (as a dip), and assessing fruit for disease development at all stages after treatment. A field sited at Mt Tamborine is currently being selected for the spray trials. Optimum concentrations of antagonists will need to be determined as part of this process. The effect of added nutrients on the colonisation of selected antagonists



Figure 1. Inhibition of fungal growth of *Colletotrichum gloeosporioides* by a bacterial isolate

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on the fruit surface will also be investigated so that we can maximise the effectiveness of applied antagonists. From these tests we will select the best antagonists.

In the final year of the project (1994/95), these isolates will be tested on a larger scale. We don't expect that any antagonists will give complete control of anthracnose, although we do hope to be able to reduce our reliance on current fungicide treatments.

Figure 2: Method of applying antagonists to the surface of 'cocktail' avocado fruit.



A Crop To Shoot To New Heights

From Successful Horticulture, March April 1993

Australian grown bamboo may soon be in demand on the domestic market as well as creating a new \$4 million export market to Asia.

Rob Andrews, of Bundaberg is one grower who is successfully pioneering bamboo farming. Mr Andrews has discovered a threefold use for his bamboo plants.

Initially, he planted five sub-species of bamboo in 1989 to provide a 320m wind break on his Bundaberg farm. Since then, he has been trying to discover which type of his bamboo is also edible and provides high quality timber.

"At this stage, not a lot of subspecies do all three," he said.

"It is my idea to have a windbreak that is profitable. If we use bamboo in this way, we don't have to use as many plants and we also have the opportunity to profit from it as shoots and timber products."

Mr Andrews said he had used barna grass in the past as a windbreak for crops, but unlike bamboo, it was nonharvestable.

"There is a necessity to use bamboo at the moment. We have to try to make every inch of ground earn money."

Now, his bamboo plants have reached 8m in height and are expected to grow to 20m.

"The bamboo is just getting to the right size now to make a good wind break. The taller it grows, the thicker it gets," he said.

Mr Andrews, an ex-cabinet maker, said he had been familiar with the uses of

bamboo for many years.

"We used bamboo for its decorative purposes. If people wanted to make a room look tropical, we would use bamboo. So I was already familiar with using bamboo for timber purposes when we planted it."

Mr Andrews added that he would have to brush up on his cooking style to make the bamboo more tasty to eat. "Some varieties, although they are edible, I wouldn't classify them as palatable," he said.

"I have tried a few different ways of preparing it, but have decided to see a few Chinese chefs about the best way to cook it."

Mr Andrews said he hoped to sell some of the shoots next year.

"There is a \$4 million export market waiting to be attacked," he said.

"It's not as easy as I thought it would be but in time we will get there. We just have to work out which variety will be commercially viable," he said.

The Queensland Department of Primary Industries (DPI) is currently conducting trials to identify suitable bamboo varieties.

DPI horticulturist, Jason Olsen, who is working on the project, said 30 edible varieties of bamboo from Papua New Guinea, Taiwan and Asia were being trialed.

"I'm looking for high yielding, superior quality varieties that will do well in our climate," Mr Olsen said.

Barna Grass Has A Place

By Orf Bartrop

Under some circumstances, barna grass makes an excellent windbreak. If used to enclose very small, reasonable level areas it has the capability to take the sting out of most winds. However, for larger fields, or undulating orchards, barna grass does not measure up as a windbreak because of its lack of height.

A windbreak can only be relied upon to provide protection for a distance of six times its height. In other words, if the windbreak is 20 m in height, it will afford some sort of protection for a distance of

120 m. This figure varies depending upon terrain and what the windbreak is protecting. Orchard trees themselves act as a windbreak and add to the effect of the initial structure.

While barna grass may not be a saleable commodity, in avocado growing it makes an excellent mulch if it can be prevented from shooting and taking root. One proven method is to cut the barna grass like sugarcane and put it through a chaff cutter. The mangled fragments will not take root and grow.



The graphic results of one avocado line sampled from a Sydney retailer in August. Expansion of the avocado market will be restricted until the problems with internal quality are solved.



Talking with retailers gave these avocado growers an insight into the difficulties of selling avocados.